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—FLORENCE DAVENPORT HILL,
Author of *Children of the State*.

CHILDREN'S NURSING.

LECTURES TO PROBATIONERS

BY

C. SEYMOUR YAPP,
Matron, The Poor Law Hospital, Ashton-under-Lyne.

AUTHOR OF

"MODERN MEDICAL AND SURGICAL NURSING FOR PROBATIONERS."

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PREFATORY NOTE.

These lectures on children's nursing are written to supplement those contained in Modern Medical and Surgical Nursing for Probationers in which the groundwork of nursing has been exhaustively dealt with. It is premised, therefore, that the probationer is familiar with elementary nursing principles. The author's thanks are due to Dr. Richmond, Medical Superintendent of the Lake Hospital, Ashton-under-Lyne Union, for kindly revising the lectures and for many helpful suggestions.

PREFACE.

The life of the Probationer Nurse is a very busy and full one. Practical ward-work occupies by far the greater part of her time, and the hours which she can devote to study and reading are necessarily somewhat limited. All the more essential is it that these study hours should be taken advantage of regularly, and that the books should be the best of their kind.

The Nursing of Sick Children is a subject of the utmost importance. It is a branch of nursing which demands special study, and I am sure that Nurses—whether trained or in process of training—will welcome the appearance of the present volume, which provides a complete, yet concise, account of the whole subject within easy compass. It is essentially a practical book, written by one whose theoretical knowledge has been acquired through long study and wide reading, and whose experience in the actual teaching of Probationers, and in supervising their work during the whole course of their training, adds additional authority to her words. It will immediately be obvious to the reader of this book that the details of the methods advocated are the fruits of prolonged practical experience in the ward, in the sick-room and in the home. Above all, the Author constantly keeps in the foreground of the reader's attention the need for that human kindliness and "mothering" which are the essential accompaniments of every detail in the successful nursing of children. The book is provided with an excellent index, facilitating rapid reference to any subject.

The Author has conferred a great boon on the Nursing Profession, and on all who are engaged in the training of Nurses, by producing this book on Children's Nursing, which will, I feel sure, take its place as a standard work on this most important branch of nursing.

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TABLE OF CONTENTS.

PAGE

LECTURE I.— Bathing an Infant—Cleaning the Teeth—Care of the Nails 1-4

LECTURE II.—Children's Clothing — Warmth — Play and Playthings—Qualifications of a Children's Nurse ... 5-8

LECTURE III.—Feeding—The New-born Infant's Stomach—The Intestines—Artificial Feeding compared with Breast-feeding 8-11

LECTURE IV.—Infant Feeding—Meat Juice for Babies—Sterilized Milk—Feeding Times—Feeding the Baby—Diluting the Milk—Bottles and Teats—Dummy Teats —How to Judge if Baby is Progressing 11-18

LECTURE V.—Preparation of diets in the Children's Ward—Constipation—Prevention and Treatment of Constipation—Prevention and Treatment of Constipation—To Make and Insert a Soap Suppository—The Infants' Stools—Pale Clay-Coloured Stool—"Curdy" Stool—Green Stools—Slimy Stools—Frothy Stools—Offensive Stools—Copious, Watery, Colourless Stools ... 19-22

LECTURE VI.—The Temperature in Children—Pulse—The Respiration—A Baby's Cries—Intestinal Colic, Renal Colic, Earache—Facial Expression and Appearance—Vomiting—Administration of Medicines—To Give Drugs per Rectum—Stimulants 23-27

LECTURE VII.—Rickets—Treatment of Rickets—Cold Douche —Laryngeal Spasm (Croup)—Convulsions—Scurvy ... 28-31

LECTURE VIII.—Epidemic Enteritis or Summer Diarrhœa—Nursing—Washing Out the Bowel—Washing the Stomach — Feeding — The Stools —Prolapse of the Bowel 32-35

LECTURE IX.—Respiratory Diseases — Ventilation — Steam Kettles—Position of the Child in Bed—Temperature, Pulse and Respiration—The Bowels and Bladder—Feeding—Cough, Expectoration, Dyspnœa and Pain—Pleural Effusion—Whooping Cough (Pertussis) ... 35-40

LECTURE X.—Cardiac Cases—Rest—Posture—The Pulse—The Bowels — The Diet — Rheumatism — Kidney Diseases—Hot-Air Bath—Securing a Specimen of Urine 40-44

PAGE

Lecture XI.—Diseases of the Nervous System—Convulsions—Epileptic Fits—Points to be noted by the Nurse regarding a "Fit"—General Treatment of Convulsions and Epileptic Fits—Meningitis—Spinal Puncture—Chorea (St. Vitus' Dance)—Nursing—Feeding—Pulse—Temperature, etc.—Enuresis (Wetting the Bed)—Night Terrors 44-49

Lecture XII.—Skin Diseases—Ringworm (Treatment)—Eczema—Starch and Boracic Poultice—Restraint—Cracks Behind the Ears—Bland Fluids—Lotions used for Eczema—Powders used in Eczema—Alterations in the Treatment of Eczema—Impetigo Contagiosa ... 49-54

Lecture XIII.—Scabies (Itch)—Pediculosis (Lice)—Pediculus Corporis—Pediculus Capitis—Urticaria (Nettle-rash)—Inunction—Medicated Baths Used in Skin Diseases (Alkaline Bath, Bran or Oatmeal Bath, Cyllin Bath, Mustard (Stimulating) Bath, Starch Bath, Saline Bath (Tonic), Saline Bath (Normal), Sulphur Bath—To make a Crocheted Net Face Mask—Common Terms used in Skin Affections 54-58

Lecture XIV.—Nursing of Infectious Diseases—Infectious Diseases—Incubation—Invasion—Eruption or Rash—Febrile (Fever) or Acute Stage—Defervescence—Special Points for Observation—Scarlet Fever (Scarlatina)—Incubation Period—Invasion or Onset—The Rash—Circumoral Pallor—Desquamation—The Tongue—The Throat—Complications—Nursing 59-64

Lecture XV.—Measles—Incubation Period—Invasion or Onset—The Rash—Nursing—Convalescence—Chicken Pox (Varicella) — Incubation Period — Onset — The Rash—Nursing—Mumps (Epidemic Parititis)—Incubation Period — Onset — Complications — Nursing—Poppyhead Fomentations 64-69

Lecture XVI.—Surgical Work—General Treatment of Operation Cases—Preparation of the Bowel—Giving an Enema—Preparation of the Bladder—Preparation of the Skin—Restraint—Nursing after Operation—Shock—Symptoms—Treatment 70-74

Lecture XVII.—Hernia—To Make and Apply a Woollen Truss—Operation for Hernia—Strangulated Hernia—Intussusception—Appendectomy—Imperforate Anus—Operations on the Bladder—Washing the Bladder—Operations on the Kidney—Phimosis—Circumcision—Hare Lip—Cleft Palate—Mastoid Operations—Bone Operations 75-81

Lecture XVIII.—Tonsils and Adenoids—Nasal Breathing—The Nasopharynx—Tonsils—Evil Effects of Adenoids and Enlarged Tonsils—Dangers of Mouth Breathing—Prevention of Adenoids and Enlarged Tonsils—Treatment of Enlarged Tonsils and Adenoids—Operation for Tonsils and Adenoids—To Make a Jaw Bandage ... 82-86

PAGE

LECTURE XIX.—Ophthalmia Neonatorum—The Conjunctiva—To Douche the Eye—Bathing a Baby's Eyes—Cold Compresses to the Eye—Hot Compresses to the Eye—To Apply Ointment to the Eye—First Air Treatment of Emergencies—Burns of the Eye—Foreign Body in the Eye—Foreign Body in the Ear—Foreign Body in the Nose—Choking—Poisoning—Bruises—Dog Bite—Wasp or Bee Stings 87-91

LECTURE XX.—Infant Dentition (Milk Teeth)—"Teething" Troubles—The Permanent Teeth—Prevention of Dental Decay—Vaccination—Worms—Thread Worms (Treatment)—Round Worms (Treatment)—Tape Worms (Treatment)—Examining the Stool for the Worm 92-97

LECTURE XXI.—The Private Nurse—Nurse's Dress—Nurse's Attitude to the Patient—Nurse's Attitude to Patient's Relatives—Nurse's Attitude to the Doctor—Nurse's Attitude to Servants—Sister's Duties in Children's Ward—Routine Work in the Children's Ward—Feeding—Amusements—Clothing—Religious Teaching of the Children 98-105

LECTURE XXII.—Infant Health Visiting—Infantile Mortality—Notification of Births Act (Extension, September 1st, 1915)—Duties of an Infant Health Visitor—Infant Consultations—Home Visiting—Special Knowledge Necessary for Infant Health Visitors—Practical Details in Home Visiting—Feeding—Clothing—Hygiene—Drugs—Visits 106-113

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CHILDREN'S NURSING.

LECTURES TO PROBATIONERS.

LECTURE I.

Bathing an Infant—Cleaning the Teeth—Care of the Nails.

Most girls love a baby or quite young child; its very helplessness appeals to them, and yet how often when a nurse is allocated for duty to the children's ward there is grumbling. I am at a loss to understand why—probably the explanation lies in the remark made to me by a probationer, "I always feel so helpless in the babies' ward, they cannot tell you what is the matter." Now, that is exactly why *special* training in the nursing of sick children is so essential; the babies cannot *tell* you of their pains or needs. Your observation must be trained to discover what is abnormal and this is far more difficult than in the case of adult patients, though even in this there is compensation, as a doctor remarked once, "Young children do not tell of symptoms which don't exist." Your term of duty in the children's ward should be the happiest period of your training, but there is sure to be a feeling of dissatisfaction if you feel you are just getting through routine ward-work and learning very little, because there is bound to be the consciousness that you are not doing all you might for the children. I was surprised, when taking duty in a children's hospital after my general training, to find how little I really knew of the *nursing* of children's diseases (though the fundamental principles are the same), and how fascinating this branch of nursing is in a hospital entirely devoted to the treatment of children. To be successful in the nursing of sick children you must understand normal child-life, e.g., how to wash and dress a healthy child, how to prepare its food, and how much a child of a given age requires. We will first consider the proper method of bathing an infant.

BATHING AN INFANT.

In hospital young infants should be bathed before the kitchen or a side ward fire, rather than in the general ward; no matter how carefully screens are arranged there is the danger of draught, and young children, especially delicate ones, so soon get chilled. Place near the fire the following things: a low stool or chair, a set of clean clothing over the guard or the back of a chair to air, a small bath or big bowl half full of water at a temperature of 102F. (tested by the thermometer), soap, flannel or sponge, soft old face towel, powder, needle, thread and a thimble if the baby wears a binder, a "chamber," and things for cleaning the mouth, viz., a small bottle of glycerine and borax, boric lotion or a solution of bi-carbonate of soda. Don the flannel apron and over that tuck in at the waist a bath towel. Strip baby all but the vest, and hold him out over the chamber; lay him in the towel and wash his face, using *no* soap; dry the face by dabbing. Never rub a baby's skin, it is so delicate that it might be injured. Remove the vest, well soap the body all over, including the head, rub the soap in with the hand, then grasping the ankles together with your left hand, place your right hand along the baby's back to support it and lift him into the bath. Support the head and back *all the time* he is in the bath. Let him kick about for a minute or two and rinse off all the soap—rinse the head towards the back of the neck and not towards the eyes. Lift him out of the bath, supporting him in the manner described, on to the towel, roll it over him and dab until he is dry, turn him over and dry the back. When quite dry, powder *sparingly* in the creases and in the axillæ and groin. Baby will probably raise a vigorous protest against coming out of the comfortable warm bath where there were no restricting clothes and he could kick about to his heart's content, but this particular cry is good for him, and he should be allowed the exercise, because the deep inspirations will expand the lungs and oxygenate the blood. When dressing baby, slip the clothes up from the feet, not down over the head. By grasping the feet and dressing him in this fashion there is less handling and pressure on the chest and abdomen where the delicate organs are. Every garment should fasten with buttons or tapes, and the fastenings should be arranged at the side or in the front so that the baby does not lie on them. No garment must be pinned. The binder (in a young baby) must be sewn. This should be just long enough to go round the back once and double across the front; it needs sewing at both sides if it is not to wrinkle. For new-born babies, a small bowl of boracic lotion and a few swabs will be needed to cleanse the eyes. Turn the head slightly to one side and with the thumb and forefinger open the eye and allow some of the lotion to flow in from the swab. After the baby is dressed, clean the mouth. Wind a strip of gauze or clean linen round the forefinger, dip it in the solution and gently rub the baby's tongue and gums with it, throw the strip in the fire. The boracic lotion or solution of bi-carbonate of soda is excellent for cleaning the mouth, but on the district I used to recommend glycerine and borax; the mothers think more of it because they get so little for a penny, and as they think it valuable they use it thoroughly, besides which it adheres to the gums and lips for some time and therefore has a more lasting action. The bath must be timed to be finished when a feed is due, and must not be given for at least an hour after a feed. A superfatted soap—e.g., Baumol—should be used if it can be afforded, but in any case procure as pure a soap as possible. The temperature of the water should be not less than that of the baby's body, and if you prepare it at 102F. it will not be more than 100F. by the time baby is put in the bath. In private practice, if you have no thermometer, the heat of the water may be roughly tested by your elbow or the back of your hand. If comfortably warm it will be about right. Baths are *always* to be tested in hospital by a thermometer, and should this be broken, one must be borrowed or bathing suspended until one is procured, unless Sister tests the water and gives you permission to proceed with the bathing. This may seem over-cautious, but experience proves the necessity of extreme care in deviating from any rule pertaining to baths or the administration of medicines. Now a word about cracks behind the ears. This condition is a disgrace in a children's ward—they may be excusable in a slum but where there are nurses in training, that training is greatly lacking if babes contract intertrigo. Cracked ears are a source of danger, to say nothing of discomfort to the baby and never occur if the parts are kept perfectly clean and are dried thoroughly. Powder is a safeguard but it is not necessary if the nurse is conscientious. Scented powders are sometimes injurious and are expensive, so on the district it is wise to advise the mother to buy one pennyworth each of starch and boracic powder. It may be used from a pepper box. In connection with the bathing of the older children it is unnecessary to repeat rules about a clean separate towel and face-glove for each child, clean water, etc., but nurses are sometimes careless about taking children to and from the bathroom. They ought not to be taken straight out of bed in their bed-clothes only—they need dressing-gowns and slippers or wrapping up in a blanket. How often do we see children pattering along to the bathroom with bare feet, or children in the bath and the window and door open? Another fault is forcing children who are obviously terrified into an adult's bath. In all children's wards, there should be fixed baths of suitable size and at a proper height from the ground so that bathing should not be a fearsome operation to the child nor so tiring for the nurse. Where these are not provided, children who have never been in a big bath are sometimes very nervous. I have found a child hysterical simply with fear. Of course the nurse who has any imagination at all would never have her patient in such a condition, but some women seem quite unable to grasp the fact that a large bath, half full of water, is something which has never entered into the scheme of things in these children's lives. The children can all be gradually accustomed to the bath with a little thought and patience; for instance, they can be warmly wrapped up, placed in a chair, and allowed to watch some child who loves the water disporting himself in the bath; probably they will soon want a game in the water too. Never use soap on the children's faces. We make this a rule in hospital, because however carefully we choose nurses for these wards, if the little faces are very sticky, the temptation to give a brisk rubbing with crude hospital soap is very strong, and soap in the eyes and nose is bad enough for grown-ups, to say nothing of babies—besides, these children so often have cracks just under the nostrils and at the corner of the lips, and soap makes them smart badly. The head when washed must be thoroughly dried before the child is put into bed again; children catch cold through damp heads very quickly. Once a fortnight is often enough for long hair to be washed as a rule. Do not use soft soap, soda or disinfectant for these children's heads. If they are small-combed regularly every day they need no disinfectant in the water, ordinary soap and water with a thorough rinsing in clean water are sufficient. In some parts of the country where the water is hard the addition of a few drops of ammonia will soften it, but probationers must not use this themselves without exact instructions. In hospital (or out of it) it is better to discourage curling the hair, which breaks it; a thorough brushing night and morning will keep it glossy, and it is your duty to do this. In hospital all long hair should be *loosely* plaited, especially where there are discharging glands about the neck, etc. There is no objection to tying the plaits with ribbon which many nurses are generous enough to provide, but when choosing the colours, do exercise some discrimination, and remember that bright red tresses should not be tied with pink. Colours need choosing especially carefully for these children as a matter of training and should not be discordant: soft or crude colours have a definite influence upon their mind.

Cleaning the Teeth.

Children's teeth need brushing after each meal. At night an antiseptic dentifrice should be used, at other times plain water is enough. If you will only take the trouble to teach the older children how to brush their teeth, up and down as well as across, and praise them when they go and do them without reminding, you will be encouraged to find how soon they learn to take a pride in clean teeth, and that it becomes a matter of self-respect with them. The bed patients will need the necessary things taking to them, and convalescents who are up can always be made to do little services of this kind, especially if you let them feel they are helping you.

Care of the Nails.

The hall-mark of a good children's nurse is apparent in the wards by the condition of her patient's mouth and nails. Nothing is daintier than a dimpled hand with carefully trimmed nails, the crescents discernible, and dirty nails are just as inexcusable in a bed patient as dirt between the toes. Older children soon take pride in their nails if shown how to keep them nice and will often go to the nurse for commendation after they have trimmed them. Remember that good habits in children, especially with regard to personal hygiene, become second nature and are not readily given up. Some of our children are with us so long that there is ample time to train them into habits of personal cleanliness which is so necessary not only for health, but for self-respect. Punctuality, good manners, daintiness at meal-times, unselfishness, consideration for others, truthfulness, and how to amuse themselves, are but a few of the many good habits a nurse may help to form, and they are, after all, the foundation of character.

LECTURE II.

CHILDREN'S CLOTHING.

Warmth—Play and Playthings—Qualifications of a Children's Nurse.

In hospital you have no choice in the matter of children's clothing, but as trained nurses you should know how to advise mothers as to suitable clothing for their little ones. Children *must* be kept warm, but by this I do not mean that they are to be over-laden with clothing, nor that a fragile baby should be nearly smothered under two full-sized blankets, folded in four, which is not an unknown fault in the children's ward. A baby's clothing must be (1) warm, (2) light, (3) large enough, that is, roomy.

WARMTH.

In choosing material for babies' clothing we need that which keeps in warmth. Some kinds of material keep the heat in—e.g., wool; others let it escape—e.g., cotton or linen. Wool is a bad conductor of heat and is therefore most suitable for the garment to be worn next to the baby's skin. On the coldest day if we go out warmly clad in woollen garments, the cold cannot penetrate, and conversely, if we wrap ice in blanket, it melts very slowly, even on the hottest day. A second advantage is that wool is very absorbent, and that is most important; a cotton or linen garment becomes wet and cold with perspiration from the body, whereas woollen garments will hardly appear damp. Both these materials are quick conductors of heat and are only suitable for wear in hot summer weather. I may here say that certain modern teaching discourages the use of woollen garments next the skin, the argument being that the skin reacts better to changes of temperature if cotton or linen garments, especially of open-mesh material, are worn. Now although these are suitable for adults or persons suffering from phthisis, where constant change of air for the skin is necessary, I want to impress upon you the necessity of woollen garments next to the skin for babes and young children, because these do not respond readily to sudden changes of atmospheric temperature. You must always bear in mind that, in comparison with the size of its body, a baby has a greater amount of surface than an adult, and therefore loses heat more quickly and so gets chilled sooner. Babies must therefore have a woollen garment next to the skin, and this must be *large* enough. The woven vests with long sleeves are excellent, but in hospital careless nurses are apt to force the little bodies into vests which have shrunk until they are too tight. Children grow rapidly during the first year or two of life, and tight garments impede development, besides which, the chest walls are pressed upon, so that the lungs cannot expand, the chest runs the risk of becoming narrow and deformed, and, most important, the circulation of the blood is impeded so that it cannot reach all parts of the body, and good circulation is absolutely essential to warmth. Further, if the vest is too tight, it shuts out all air, and layers of warm air between clothing are excellent non-conductors of heat. You will find on the district that the mothers purchase flannelette, and I must confess that my sympathy is with them, it looks so soft and cosy. But you must always condemn flannelette as a material for children's clothing, first, because of its inflammable quality, and secondly, because it has all the defects of cotton. If you hold a shred of flannelette to a lighted match, you will see how readily it flares up, whereas flannel smoulders. Many a child has lost its life through wearing a flannelette garment; baby is usually placed near the fire, and a spark is quite sufficient to set a warm flannelette gown ablaze. It is perhaps a counsel of perfection to recommend flannel which costs anything between 1s. 4d. to 1s. 9d. a yard, to a working woman who has a family to rear on 25s. per week, and one can readily understand how tempted a poor mother is to invest in a soft, pretty, fluffy flannelette of which she can buy sufficient for three garments at the cost of one of flannel. There is a flannelette on the market prepared with alum and said to be non-inflammable. If flannelette *is* used, the garments ought always to be rinsed in alum water, which will lessen the danger of fire. It is really better to recommend unbleached calico if expense is a great consideration; it is warm and wears longer than flannelette. In hospital, clothes are provided for children with an eye to the various conditions for which they are needed. The new babies have a flannel binder (unhemmed), a woven vest, swansdown cotton diaper, a woollen barrow to come four inches below their toes (and this must *not* be pinned over, the baby cannot kick if it is), a roomy gown of wincey or soft flannel with a band fastening in *front*, and a light woollen square for the head. The older children in the children's ward wear open or closed flannel gowns according to their condition. If acutely ill, or there are dressings about the body, the open gowns are best. Babes who prefer to be on the top of the bed instead of *in* it (as is the case with rickety children) wear woollen gowns with a running string in the hem at the bottom—I prefer these because the feet are kept covered—a red jacket, and in the case of a babe, a bib, complete the dress of a bed-patient in hospital. With regard to the clothing of the older children on the district, the same rules as to warmth, lightness and looseness, apply. As far as possible, every garment worn by children should be *washable*. If possible, all children should be clothed in wool from head to foot; bare arms and legs are *dangerous*; they may satisfy the mother's ideas of beauty, but they tend to cause chills, if not serious illness. On the other hand, mufflers for the neck are quite unnecessary. You will always advise a mother never to allow her little girl to wear garters or corsets. If tight enough to fulfil their function, garters impede the circulation, and the stockings should be kept up by suspenders attached to soft stays. Badly cut boned corsets are an abomination, and among the poor the evil results of their use are too numerous to mention here. Fortunately, modern fashions, influenced by public opinion, now demand a corset following the natural lines of the body, which are beautiful, and show no constriction at the waist. You should impress this on young girls who are more influenced than you may realise by what a nurse says. At about five years old, little girls may be put into serge knickers with detachable washable linings; these are more cosy, less bulky and more decent than petticoats, and what the little girl thoroughly appreciates, the legs are freer. At night, if possible, both boys and girls should wear sleeping suits. If a night-gown is worn, it must reach well below the feet, and if it is not flannel, a woollen vest should be worn. All clothing, especially that worn next the skin, needs frequent washing, and the under-garments and bed-garments of young children should be changed at least twice a week, because their skin is so delicate, the pores, being so fine, become easily clogged. As the skin is so tender, babies' gowns and children's frocks should never be starched about the neck and sleeves.

PLAY AND PLAYTHINGS.

Babies and young children should be trained to amuse themselves. Babies who come to our wards are often so accustomed to being nursed and entertained by older sisters, that they will not be pacified for days. Now babies are quite intelligent enough to find out that if they cry long enough, they will be nursed, and ward life is the first taste of discipline to these poor mites. Toys are now so cheap that there is the danger of supplying children with far too many. The choice of toys for a hospital ward is really a serious matter because of the risk of their carrying infection. The younger a child is, the fewer toys he will need. The first playthings for a baby are his fingers and toes, and you will find he does with those as he will do with most things for a time, make strenuous efforts to put them in his mouth. Avoid toys which are coloured with cheap paint and have sharp edges, whilst stuffed animals should be kept strictly for the baby to whom they belong and should be destroyed on the child's discharge from hospital. Toys should be tied to the cot so that they do not fall on the floor and thus become contaminated. Children like to destroy toys, and this is a habit which must be checked; a child can be trained to take care of his possessions. The convalescent children should not be allowed to leave the day-room until every toy is put tidily away, and this will be a valuable training in tidiness. The smaller children who are well enough to be up may be placed on a blanket near the fire with their toys and allowed to crawl. See that the fireguard is secure and remember that a child is never afraid of fire until he has been burned. Also see that there are no needles or pins on the floor, and if you have been changing babies near the fireplace do not leave the "toilet tray" on the floor, young children love powder boxes as playthings.

Before proceeding to the nursing of sick children we will consider the necessary

QUALIFICATIONS OF A CHILDREN'S NURSE.

The personal qualities necessary for success in the nursing of sick children are identical with those which are essential for the management of healthy children except, perhaps, the sick nurse should possess them in a greater degree. The successful children's nurse must have a real love for children; little children cannot be loved too much but they must be loved wisely. The nurse must possess sufficient imagination to enable her to put herself in her little charge's place. She must have a sympathetic understanding of child-life, an abundant patience in dealing with children, and keen powers of observation. Unfortunately there are children who come into the world handicapped from the very beginning, and it is chiefly this class with whom we have to deal. Many of our little ones will never know the joy of a really healthy, active life, and it is to you, and in many cases, you alone, that they will turn for that love and understanding which is every child's birthright. As nurses you have an enormous influence in the children's ward; your manner, your uniform, your authority, your skill, all appeal powerfully to the children. Unconsciously perhaps, these children try to mould themselves on their conception of nurse. We cannot date the age at which a child begins to understand, so that we ought to be particularly careful how we answer its questions and of our conversation in the ward generally. Finally, in nursing these children, we must remember that we are dealing with other people's property, so we must take care not to spoil them, to which there is a far greater tendency in Poor-Law than to neglect them, which in any case would not be permitted. Probably many of you think that these children must be far happier with us than they are in their homes. Now they are certainly in a *healthier* environment, but I am not at all sure that they are happier. However poor the house they have come from, it is their *home*, and that is what the ward can rarely be. You may think how *can* the mean rooms, sordid surroundings, squalor and poverty compare with our spacious, beautiful wards? Well, there it is, that is home; mother is there—the unselfish, tired mother, nursing the six months baby, watching the eighteen months baby, trying to keep the three-year-old out of mischief. The others are old enough to go to school and play in the streets. Although there are father's and children's meals to prepare, children to get ready for school, to clothe, to mend and wash for, to say nothing of the house to keep in some sort of order, mother is there to caress and soothe when pains gnaw at one, and things are becoming more than one small person can bear alone.

There is a quality of happiness in these very homes which we cannot in the nature of things realise. The family of the working man are so closely thrown together that they instinctively cling to one another, and wherever there is self-sacrifice, which is inevitable in these conditions, there is the essence of love. It is in the power of every nurse to make these children feel that they are not "unwanted" and to see that at any rate they will never feel "unmothered" in the wards of a Poor-Law Infirmary. No nurse with motherly instincts will ever allow a child to go to sleep unhappy. Children respond to loving-kindness (a very different quality to kindness) generously.

LECTURE III.

Feeding—The New-born Infant's Stomach—The Intestines—Artificial Feeding compared with Breast-feeding.

FEEDING.

More deaths occur from improper feeding in children under a year old than from any other cause, therefore, the feeding of children, whether well or ill, is the nurse's most important duty, and if the many points to be observed with regard to the feeding of a healthy, hand-fed babe are not intelligently understood, you will certainly be at a loss with a sick one. The majority of infants in our wards

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¶ A Nurse, subjected as she is to this incessant strain, requires, more than anybody else, extremely nutritious food to sustain her strength. Moreover, it must be food that is easily assimilated, so that indigestion shall not still further deplete her system of energy. That is why we offer to send, free of charge, to any Nurse a full sized tin of Glaxo for her own use.

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are admitted suffering from some form of mal-nutrition, and the experience to be gained in the scientific feeding of these children is invaluable; that is why interested nurses trained in Poor-Law Infirmaries, who have had experience in the children's wards, make such competent infant health visitors. There is certainly no other branch of our work in which one is more amply rewarded than in the children's ward. You are all familiar with the type of patient so frequently brought in—the emaciated little skeleton, with grey-coloured, dry skin which can be lifted in folds, the face wizened and old—mal-nutrition—the commonest diagnosis in the children's ward. I have sometimes found a tendency on the part of young nurses to blame the mother for the condition of these children, and whilst you are in training let me impress upon you that the mothers need your pity as much as the babes, in the majority of cases. Not until you work among the poorer classes can you realise the complete unselfishness of the laborious lives of these women. It is *so* easy to remark that a baby has been shamefully neglected and *so* very difficult to bring up a hand-fed baby, one of a family of five, on £1 per week. The harassed mother who brings her baby probably knows by the very expression of your face that you blame her, and I do assure you that the weary "I've done my best" is often true. Do let me beg of you to extend your pity to the mother who has failed; make her *feel* that you think she has put up a good fight. This attitude *is* so necessary for a nurse, and will be your greatest asset when you go to work among them in their homes. You know some of these babies do not get better even in our wards, in spite of most expensive and careful dieting, and if they do not get well in a Poor-Law Infirmary, they will not anywhere. The longer I worked among the poorer babies the more I marvelled, not that so many died, but that so many lived, in the face of such odds. Before discussing the question of infant feeding, we will consider briefly that exceedingly delicate bit of machinery, the baby's stomach and intestine.

THE NEW-BORN INFANT'S STOMACH.

A baby's stomach at birth holds about one-and-a-half ounces, or *three tablespoonfuls only.* By the end of the first week when two or three hourly feeding is established, it probably holds two ounces, not more. The capacity of the stomach is said to increase one ounce each month up to eight months, when development is slower. At one year of age, the capacity is nine ounces, and at eighteen months it is twelve ounces. The time occupied in gastric digestion varies with the age; as the quantity taken increases, the time the stomach takes to empty itself lengthens, hence the longer interval between feeds of a larger quantity. The stomach of a new-born baby instead of lying in a horizontal position is almost vertical, and this explains why quite young babies regurgitate or "posset" so easily—as you have been told, that is just one of nature's safety-valves, being like the over-flow of a filled bottle. Now a baby's stomach is a most delicate thing and will not endure much experimenting, so all changes in the baby's food must be made cautiously. Even in hospital we sometimes find a change in the diet prescription producing alarming results, so that it is not difficult to understand how a nervous young mother with her first baby will anxiously try what *her* mother suggests, then what "his" mother recommends, and finally in desperation at increased vomiting, diarrhœa, etc., what the well-meaning lady next door "who has had eight and lost six, so ought to know," suggests as the best food for baby. And I have heard this pitiful ignorance condemned as neglect when wider knowledge would compel pity!

The Intestines.

The small intestine at birth is only about nine feet long, whereas an adult's small intestine is twenty feet long. It is in the *small* intestine that the fats are digested and absorbed. The large intestine is about eighteen inches long in the infant, in the adult it is about six feet in length. Now the large intestine has very little absorptive power and it is important for you to keep this in mind.

Artificial Feeding compared with Breast-feeding.

The only *perfect* food during the first six months of life is the mother's milk, and if for any reason the mother cannot feed her infant, it is in many cases nothing less than a calamity. Unfortunately, there are circumstances in which it is impossible for the child to be breast-fed, and we then have to fall back on artificial food. The best substitute for mother's milk is cow's milk, altered and diluted to resemble human milk as nearly as possible. Trained nurses must always do everything in their power to make it possible for the baby to be kept on the breast, and must never waver for a moment in the creed that human milk is the *best* food for the baby under most circumstances. The only absolutely safe way to give cow's milk to a baby is through the mother. You will notice in the maternity ward that when Sister reports that a mother has not sufficient milk, the doctor adds an extra quart of milk a day to her diet. On the district, advise a nursing mother to drink gruel and cocoa, with as much milk in it as she can afford, also soup. An important thing is to find out *exactly* how much the mother *is* drinking. She will probably consider sufficient a quantity you will think far too little. Nursing mothers ought to have liquid food every two hours during the day for the first three months of lactation. Cows must be well fed to give plenty of milk, so must human mothers. Large quantities of fluid help the breasts to secrete by raising the blood pressure, and a further benefit is that constipation is avoided to a certain extent, and this is important to the baby as well as the mother. As much fat as possible should be included in the mother's diet as this prevents rickets in the babe (rickets in hand-fed babies is largely due to lack of fats in their diet). A further advantage of human over cow's milk is that it is absolutely sterile, whereas cow's milk is exposed to innumerable risks of contamination before the baby gets it. The curd formed by human milk in the baby's stomach is soft and friable and very different from the hard, leathery curd produced from cow's milk. Now the curd formed from the mother's milk is so soft that it is soon broken up in the baby's stomach, but the leathery, tough curd of cow's milk may pass out of the stomach into the intestine, and the presence of hard, unyielding curds in the intestine is likely to produce convulsions; that is why rickety, hand-fed babies so often have "fits." The following is a simple table showing roughly the difference in the composition of human and cow's milk :—

Ingredients.	Human Milk.	Cow's Milk.
Casein (curd) and albumen...	2 parts.	4 parts.
Fat (cream)	3.8	3.4
Sugar	6	4
Mineral Salts	.2	.6
Water	88.	88.
	100	100

As you will see on comparing the table, the problem in feeding with cow's milk, is to dilute in such a manner as to prevent the formation of hard curds on the one hand, and on the other to add sufficient fat and sugar to make up the deficiency. The casein in cow's milk besides being excessive in quantity, is of a different quality and not nearly so digestible as that of human milk. The dilution of the milk to obtain a smaller curd, will, of course, throw out of proportion the cream, which was previously nearly correct and will make less the percentage of sugar, originally too small. The question of cream is a difficult one because it is expensive and at the best is probably adulterated with preservatives. For this reason the best method I know in private practice is to use the upper third of a pint of new milk, which has been standing, *covered*, for not less than four hours. The proportion of cream is then about sufficient. Skimmed milk must *never* be used for the baby, the older children or the mother may drink it; it is excellent for them—you will remember casein is one of the " flesh-formers " and the skimmed milk contains the casein. If possible, sugar of milk should be used for the baby's feeds, but if this cannot be afforded, ordinary sugar must be substituted. The proportions are usually about one teaspoonful of sugar of milk to *three* ounces of fluid, or one teaspoonful of ordinary cane sugar to *six* ounces of fluid.

LECTURE IV.

Infant Feeding—Meat Juice for Babies—Sterilized Milk—Feeding Times—Feeding the Baby—Diluting the Milk—Bottles and Teats—Dummy Teats—How to Judge if Baby is Progressing.

INFANT FEEDING.

The schedule given below (in use in this institution) was drawn up as a *guide* for the feeding of infants, but it must be borne in mind that a big vigorous baby will require more and will be able to digest a stronger quality of nourishment than will a small or delicate baby of the same age. A tiny pinch of salt should be added to each feed.

For sick children the feeds must be given according to the doctor's prescription, but it is important to remember that apart from the weight chart, the doctor is to a great extent dependent on the observations of the nurse as to the suitability of his prescription. If

Age	1st week	2nd & 3rd weeks	One month	Two months	Three months	Four months	Five months	Six months	Seven months	Eight months	Nine months
Milk	2 drachms	4 drachms	4 drachms	1 ounce	2 ounces	3 ounces	4 ounces	5½ ounces	6 ounces	7 ounces	8 ounces
Barley Water ..	6 drachms	1 ounce	1½ ounces	2 ounces	2 ounces	2 ounces	1½ ounces	1½ ounces	1 ounce	1 ounce	—
Cream	—	—	1 drachm	1 drachm	2 drachms	2 drachms	2 drachms	2 drachms	2 drachms	2 drachms	2 drachms
Demerara Sugar .	½ drachm	½ drachm	1 drachm	1 drachm	1 drachm	1½ drachms	2 drachms	2 drachms	2 drachms	2 drachms	2 drachms
Quantity of Fluid in each feed ..	1 ounce	1½ ounces	2 ounces 1 drachm	3 ounces 1 drachm	4 ounces 2 drachms	5 ounces 2 drachms	5 ounces 6 drachms	7 ounces 2 drachms	7 ounces 2 drachms	8 ounces 2 drachms	8 ounces 2 drachms
Interval between feeds	2 hours	2 hours	2 hours	3 hours	3 hours	3 hours	3 hours	3½ hours	3½ hours	4 hours	4 hours
Total number of feeds from 5 a.m. to 11 p.m. ..	10	10	10	7	7	7	7	6	6	5	5
Total amount of Fluid in 24 hours	10 ounces	15 ounces	21 ounces 2 drachms	21 ounces 7 drachms	29 ounces 6 drachms	36 ounces 6 drachms	40 ounces 2 drachms	43 ounces 4 drachms	43 ounces 4 drachms	41 ounces 2 drachms	41 ounces 2 drachms

One feed may be given at night (at scheduled interval) if necessary.

the babe vomits curds, or the stool contains curd, the food is too strong or the quantity excessive. "Possetting" in a healthy infant is of no importance. If a baby cries after finishing his feed he is probably unsatisfied and the feed may be increased in quality or quantity or in both. Some doctors prescribe raw milk, others sterilized; both have advantages and disadvantages. The tendency to order raw milk is undoubtedly growing, and if the milk is quite clean, it is certainly preferable to sterilized milk for the following reason: boiling, or the process of sterilization at a higher temperature than boiling, destroys a certain life-giving property found in raw milk, and children fed for any length of time on sterile milk are apt to develop scurvy. For this reason the doctor may order such babies fresh meat juice, one to two teaspoonfuls of orange or grape juice, and I have known spinach juice ordered. These contain certain salts which are necessary for the proper nourishment of infants and which are destroyed in sterilization. As you know, scurvy babies improve wonderfully if put on raw milk, and meat or fruit juice. You must remember to give the orange or grape juice at a sufficiently long interval after the milk feed, so that the digestive process will not be disturbed. The meat juice is added to the milk.

Meat Juice for Babies.

Mince finely ½lb. rump steak, mix thoroughly with 2 ounces of cold water and a pinch of salt; stand for an hour, then squeeze the juice through muslin in a lemon squeezer into a perfectly clean dish, or it may be expressed through double muslin in the same way that a fomentation is wrung. *Do not* sterilize or heat above 98 (the temperature of the feed) or the proteid will be made insoluble.

Sterilized Milk.

The advantages of sterilized milk are:—(a) The injurious germs (or most of them) are killed by heat. (b) The curd is said to be more digestible. In hospital the sterilization is usually carried out as follows:—The prescribed quantity of milk, cream, water and sugar of milk or demerara sugar for each feed is accurately measured into the bottles which are "corked" with a pledget of cotton wool. (The whole day's supply should be prepared at the same time.) The bottles are then placed in a fish kettle containing hot water which is brought to the boil and left for not more than ten minutes, after which time the bottles are lifted out on the drainer and placed in the refrigerator, milk-safe or other cool place. The milk itself does not boil but is raised to a temperature of 160F. or 170F. If kept at this temperature longer than 10 minutes its nutritive qualities are diminished.

The preparation of infants' feeds is certainly one of the most important duties in the children's ward, and it must not, when once begun, be left and probably forgotten. Nurses sometimes excuse themselves for forgetting the feeds by saying that the sterilizing takes a long time which they feel they cannot spare from the ward work. Now, as I have said, there is nothing more necessary for the well-being of the infant than properly prepared feeds, and if carefully planned, the whole process of sterilization should be complete in twenty minutes if the following points are remembered:—(a) The water added to the milk should be very hot. It will not break the bottles if the milk and cream are put in first, that is, if it is carefully poured in. (b) There should not be too much water in the fish kettle, only sufficient to reach the neck of an eight-ounce bottle. (c) The water in the kettle must be hot but not boiling or the bottles will break. (d) *After* the water has reached boiling point it should not be allowed to remain more than ten minutes. If these points are observed the milk should be ready by the time the nurse has washed the measures, scalded the milk and cream tins and boiled the teats. Here let me emphasise the importance of the nurse being responsible for the cleansing of the milk cans. Any duty connected with the milk for babes should be done by a responsible person. The "Agrippa" teat is the best pattern. The teats must be boiled morning and night, and there is no objection to throwing them into the fish kettle when the water boils; they can be lifted out on the tray with the bottles. It is a good plan to keep the teat for each babe in a medicine measure containing boracic lotion; the measure is marked with strapping on which is written the baby's name. The number of feeds needed for the day is prepared from the morning's supply of milk, and those for the night from the evening's supply. It is unnecessary to mark the bottles because the quantity is shown on the bottle and the nurse should know which quantity each babe is on. When required for use, take the bottles, place in a bowl of *warm* water to air them, if hot is used they will certainly crack. After airing them place in a saucepan of very hot water for three minutes, when the feeds should be about 98deg. F. Do *not* test the heat of the milk by putting the bottle to your own lips, and above all, do *not* put the teat in your own mouth (it is necessary to tell young nurses this). Place the teat straight from the boracic lotion on to the bottle, adjusting it by the rim; without wiping off the lotion, put the teat in baby's mouth and you will rarely have "thrush" in your ward—the lotion acts as a mouth-wash, a very necessary thing for bottle-fed babies. The temperature of the bottle may be tested by holding it against your cheek or the back of the hand if there is no thermometer. I have purposely spoken of the fish-kettle which we use here as the sterilizing apparatus; there are many patterns of milk sterilizers on the market, all more or less complicated *and* more or less expensive. The Soxhlet, a cruet-shaped apparatus, is perhaps the best pattern, but after experience with several, the simple fish kettle of ample size answers best in hospital, I find. It is better that you should be trained as far as possible, especially with regard to children's nursing, to do efficient work without expensive appliances, which you are not likely to get on the district, for example. In hospital each feed is mixed separately; this is to impress you with the importance of accuracy in measuring quantities and is done for the purpose of training, but if you are preparing feeds in private nursing the total quantities may be mixed together, well-stirred, and the necessary amount for each feed put in the bottles. In homes on the district, you are not likely to find a fish kettle, nor six or eight bottles for one baby, and it is just in these homes where the milk is likely to become contaminated and where sterilization is so necessary. The following method may be recommended to the mother:—Place the jug of new milk covered with a saucer in a saucepan containing hot water, bring just to boiling point and keep there for twenty minutes; as the jug is not closely covered, the milk will not boil, but it will be of a sufficiently high temperature to kill harmful germs. A further advantage in this method is, that as the milk does not boil, its anti-scorbutic properties are to a certain extent retained. It *must* be kept covered either by a piece of clean muslin or a clean saucer. In hot weather, advise the mother to keep it standing in a basin of cold water, covered by a piece of clean muslin, the ends of which should be in the water (a yard can be bought for 2¾d. and will last a long time with care). Cream is, of course, quite outside the limits of a working-man's income, and where the baby is not thriving well, or is constipated in spite of "top milk" being used, I have seen good results from one small teaspoonful of Nestle's milk (unsweetened Ideal Brand) given after feeds. Another way to supply fat is to scrape a tablespoonful of beef suet very finely into the top two-thirds of a pint of milk before sterilizing. The question of feeding baby with milk from one particular cow is sure to arise in private practice. The advantage is that an uniform quality is secured; on the other hand the cow chosen might have a tendency to tuberculosis, so that mixed milk from a herd is preferred by some doctors. Your advice may be asked as to a suitable food for a hand-fed baby who is not thriving. It is quite safe to recommend "modified milk" prepared by Clay, Paget and Co., Ltd., 71, Ebury Street, London, S.W. The modified milk is prepared under ideal sanitary conditions at a farm and is scientifically modified according to the child's age. All it requires is dilution with sterile water, exact directions for which are given. This milk is digested by the most delicate babies who improve rapidly on it. It *is* the nearest approach to human milk procurable. The cost is prohibitive for poor children except in our hospitals, but it may be recommended without hesitation in private practice.

FEEDING TIMES.

Feeding should be at regular hours. Whether breast-fed or hand-fed, irregular feeding upsets the baby's digestion, giving him wind and making him fretful and irritable. All feeding should be done *by the clock*, and in the day time some authorities hold that the babe should be wakened for feeds: this certainly teaches him regularity. Modern teaching advocates longer intervals between feeds and, *en passant*, some doctors are now ordering undiluted milk for babies from two months old, as they argue that water not only dilutes the milk but the gastric juice also. The infant is fed on suitable quantities of raw, undiluted milk and given drinks of water between feeds. Certainly, we have frequent examples of babes in the ward who thrive wonderfully on milk which is very little diluted and in rare instances quite undiluted, but all baby feeding is empirical.

FEEDING THE BABY.

The infant should be made clean and comfortable before feeding so that he need not be moved about afterwards. During feeding, baby should be held as far as possible in the natural position, that is a semi-sitting one and not laid flat. The time taken over each feed should be from fifteen to twenty minutes and during feeding his majesty's attention must be kept on the business in hand, it should not be attracted elsewhere. A young baby will need the remainder of the feed warming when about half has been taken, the reason why half is often left is because the baby objects to cool milk. If the teat is new the milk comes slowly and the hole may need enlarging, but this must be done very carefully, because if a scrap too large the milk comes too fast, a far worse fault than too slowly. After feeding, hold the baby up a little while to enable him to bring up any wind, *gentle* patting on the back will help this, then lay him in the cot on his right side, as, if laid on the left side immediately after food, the full stomach may impede the action of the heart. The baby must *never* be jogged up and down after feeding, such treatment will certainly make him sick, whether he be hand-fed or breast-fed. In busy wards where there are too few nurses and many bottle babies I know how difficult it is for the nurse to take the baby up to feed, but if at all practicable this certainly ought to be done and no question of expediency excuses an infant being left with a bottle. This, of course, does not happen in hospitals where there is a sufficient staff, i.e., one nurse to four children, but very few of our hospitals yet have this proportion. Should you ever be nursing in a creche or under conditions where you have many bottle babies, perhaps half-a-dozen due for feeding at the same time, a useful contrivance for holding a baby's bottle is a wedge-shaped block of hard wood, to the centre of which is attached a flexible brass band about an inch wide—the band, opening like a bracelet, grips the middle of the bottle, and the shape of the block allows it to be fixed at any angle to suit the baby's mouth. I have seen this used in a children's hospital, and it is undoubtedly a boon where one is short-handed. The nurse *must* go from cot to cot to see that the teats are not gummed together as sometimes happens, when they need adjusting to allow the entrance of air, or the baby may lose the teat, or go to sleep. Nothing is more reprehensible than to go and find a babe asleep, its wee cheek against a cold, half-empty bottle, and, perhaps, the little bed-coat wet with milk.

Diluting the Milk.

You may be asked as to what is the best diluent. Now, on the district, for safety's sake I always used to answer barley water, because though a mother would not see the necessity for boiling plain water, she will make the barley water with boiling water. Remember to impress upon the mother that this must be kept covered just as carefully as the milk. Robinson's Patent Barley is convenient to use and is a favourite preparation on the district. Two teaspoonfuls are mixed to a paste with a little cold water taken from a measured pint; the remainder is brought to the boil and added to the barley. The barley-water must then be allowed to *simmer* for seven or eight minutes, during which time it must be stirred with a *wooden* (not metal) spoon. A useful diluent is made with one small level teaspoonful of bicarbonate of soda to a pint of cool water which has boiled, one tablespoonful of this is equal in alkalinity to limewater and is much cheaper. Do not forget that babes grow thirsty, and need a drink of water just as much as grown-ups. A drink of sterile water between feeds is excellent for them in every way.

BOTTLES AND TEATS.

The best feeding bottle is the boat-shaped one with an opening at both ends so that it is easily kept clean. One of the good patterns is that designed by Mellin's, because when in use the food is kept in contact with the teat without an air space until the bottle is emptied, so that no air is swallowed. The one drawback to such bottles for poor people is their cost. Two of these bottles with their teats and stoppers are quite outside the income of the poorer classes. In most towns now there are schools for mothers or municipal depots where graduated feeding bottles may be bought for 2½d. or 3d. In the country an ordinary cylindrical-shaped bottle with sloping neck to which an Agrippa teat can be fitted, is the next best pattern to advise. Two bottles and teats must be kept in use and used alternately. As soon as the baby has finished the feed the bottle must be rinsed in *cold* water; once every day the bottles must be boiled or well washed with a brush in boiling water and soda, they must then be rinsed thoroughly and placed in clean cold water. This water must be changed twice a day. Teats must be turned inside out and boiled. The mother may complain that boiling makes the teat soft and this means new ones oftener, a consideration when they are threepence each. Tell her it is cheaper in the end to buy teats than to injure her health and lose her sleep nursing a fretful baby.

DUMMY TEATS.

"Dummy teats" or baby "comforters" would be more truly described as baby killers. Babies do not like them at first, and would never use them if not forced to do so by ignorant nurses or mothers. Of course, they are never seen in a hospital ward because they are taken from the baby in the receiving ward. The obvious objection to the "dummy" is that it conveys dirt to the baby's mouth. The teat falls on the floor, lies on a dusty table, or more often than not is attached to a dirty pinafore by a piece of ribbon. Nearly always the baby cleans it for itself, but sometimes the mother sucks it before putting it in baby's mouth! There are many other objections; the suction applied to the comforter leads to a great waste of saliva which ought to assist in the digestion of food. Baby thinks that if he sucks long enough milk will come, so he uses up saliva which is needed for digestion. The use of the comforter distorts the shape of the mouth and the constant sucking probably displaces the growing teeth. Many doctors claim that adenoids are caused by the use of the comforter and these are very troublesome, and, indeed, harmful to the child, for they prevent a proper supply of air reaching the lungs and so impair the general health of the child. The most forcible argument and the one most likely to appeal to the mother is that the "dummy" gives the baby "wind on the stomach" as air is swallowed.

HOW TO JUDGE IF BABY IS PROGRESSING.

The answer given by a nurse in training to a query as to how she knows a babe is thriving would in all probability be, "by his weight." Now, I think this is somewhat misleading. Some years ago I was asked to act as judge at a baby show; never let yourselves in for that! Suggest the Medical Officer of Health or some popular doctor—if he will take it, which he won't if he is wise! There were many babes, some of them hefty, weighty specimens of what Blank's Patent Food can accomplish in the way of fat. I, of course, plumped for three first class normal babies with closing fontanelles, firm bones well covered with healthy muscle, pink mottled skin, but by no means the heaviest. Fortunately for me, just as the mothers were deciding I knew nothing of babies (though I had been a baby inspector) the Medical Officer of Health arrived and emphatically confirmed my choice. I believe several consolation prizes in the form of half-crowns were given as a sop to injured maternity! We may say definitely that if an infant does not increase in weight at least four ounces weekly consecutively, he is not progessing, but some of the heaviest and fattest babies are most unhealthy. These are the babes who are having too much carbo-hydrate in their food, who are being brought up on bread "pobbies" or patent foods which contain an excess of starch. (Allenbury's, Glaxo, and Mellin's Food are entirely free from starch, and the last-named humanizes cow's milk, that is why it is ordered in the wards.) A rickety baby is anything but healthy, but he may weigh half as much again as a perfectly healthy baby. (1) A normal infant should not put on less than four ounces or more than eight ounces weekly (a healthy babe should double its weight in five months and treble it in fifteen or sixteen months; the average weight of an infant at birth is seven pounds). (2) The muscles should be well developed and there should be no tenderness of joints when they are touched. If a baby cries when you manipulate the joints—that is pull them gently, which is good for him—you must report it to the doctor; tenderness of the muscles or joints may mean rickets or scurvy. (3) The skin should be soft, elastic, with a healthy, pink, mottled appearance, it should be warm, but there ought not to be perspiration at the back of the head or neck at night. There should be no eczema or spots. (4) The fontanelles should be closing. The membrane covering them should be neither depressed nor bulging.

In concluding this lecture on feeding I shall not speak of all the foods which are unsuitable for babies because there is *no* food so suitable for a baby as its mother's milk if she is healthy, and *no* artificial food at all is suitable for a baby under six months old except cow's milk, altered and diluted if necessary to resemble human milk as far as possible.

If practicable, at the conclusion of this lecture a baby near the normal standard should be shown, and if possible compared with one suffering from mal-nutrition. The skin, muscular development, fontanelle, etc., should be compared and noted by every member of the class. The advantages of certain proprietary preparations—e.g., Virol, Mellin's, Glaxo—prescribed in the wards should be explained. This is essential nowadays, when so many of our nurses take up Public Health work. Unless they are taught, young nurses cannot differentiate between harmful, starchy preparations which they will find in popular use on the district, and the really valuable dried milk foods, such as Glaxo, Cow and Gate Milk Food, which are such a boon in slums during hot weather. Various feeding bottles should be demonstrated and their advantages and disadvantages explained. The difference in the shape of feeding bottles with its influence on the baby's digestion is neither sufficiently recognised nor taught.

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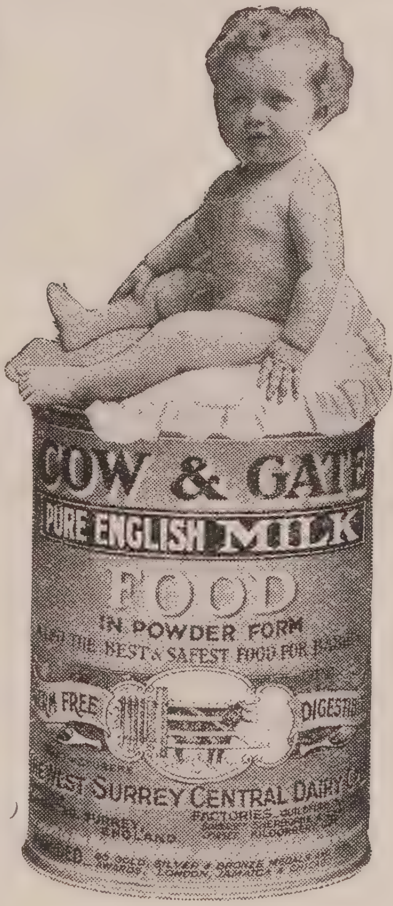

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LECTURE V.

Preparation of diets in the Children's Ward—Constipation—Prevention and Treatment of Constipation—To Make and Insert a Soap Suppository—The Infants' Stools—Pale Clay-Coloured Stool—"Curdy" Stool—Green Stools—Slimy Stools—Frothy Stools—Offensive Stools—Copious, Watery, Colourless Stools.

PREPARATION OF DIETS IN THE CHILDREN'S WARD.

In preparing diets in the ward, the important point is to make them as palatable as possible. The dinners in the full diet are best prepared as follows for all children under five. Mince the cooked meat, mash the vegetables and mix together in a saucepan or bowl, season, add the gravy and some bread-crumbs, make thoroughly hot on the range, then place a portion according to appetite on each *warm* plate. All interested nurses know the capacity of each child's appetite. Serve promptly to the children before the food has time to cool. The dinner for those children who cannot feed themselves should be kept hot until you are ready to feed them, and should not be left on the lockers for twenty minutes or so whilst you feed other children. A dry diet causes constipation, so little children should be given plenty of gravy with their breadcrumbs, meat and potatoes. Butter, margarine, dripping, lard, bacon-fat and suet are all excellent articles of diet for children. Fat, in moderation, is *so* necessary for our children, but if a mite of four or five once detects pieces of fat among her potatoes, she will certainly turn against the meal, and will look with suspicion upon all future dinners in hospital. Remember the suet puddings of your own school days! Did you never assiduously pick out every scrap of suet and decorate the rim of your plate? The best way to give fat to children is to render it down to oil and mix a little with the potato, breadcrumbs, etc.; fortunately most of the children who come to us make short work of a "piece" of bread and dripping or toast. Foibles in the matter of food cannot be ignored in *sick* children; during illness is not the time to break bad habits in the way of pampered tastes—when the child is better, then he must submit to discipline in food as in other matters. Until you know whether an ailing child will take them together, do not mix prunes, apples, figs, or whatever fruit is issued with the milk pudding or custard. Poor-Law hospital children, admitted from outside, have rarely known the luxury of a second course, beyond bread and jam or treacle (both very good articles of diet), and many of them turn with disgust from mixed fruit and milk at first, though, curiously enough, they thoroughly enjoy a *savoury* mess. I have usually found that they will take the sweets separately. Apples, eggs, etc., are issued uncooked in most hospitals and an interested nurse will devise change for her little patients.

Remember that some children look upon raw fruit as a treat and cooked fruit as a medicine, so give it raw, occasionally, where practicable. A baked apple will often appeal to the child who shudders at one stewed. Jam, marmalade and treacle are all good for children, and porridge and brown bread are excellent and most helpful where there is a tendency to constipation.

Constipation.

Constipation in infants may be due to deficiency of fat in the diet, intestinal muscular weakness, over-distension of the bowel due to improper feeding, lack of fluid in the diet, want of training, and more rarely, to mechanical obstruction. It is most important that a child should have a healthy action of the bowels at least once a day, that is why you are required to keep a special "B.O." chart in the children's ward, because it is a matter of too great importance to be left to the nurses' memory. The bowels, as you have been taught, have to get rid of toxines, and if they do not act, the poisons are re-absorbed into the blood, producing many serious symptoms. Apart from these effects, the pressure of a loaded bowel on the adjacent organs is very injurious. Constipation in a teething baby is a serious thing and is productive of intense nervous irritability, which may result in convulsions if not relieved. Some babies suffer from diarrhœa during dentition, and this should not be checked unless excessive, because it tends to relieve the nervous irritation by getting rid of the toxines.

Prevention and Treatment of Constipation.

In babies, constipation may be relieved by the addition of cream to their feeds, or, as in the wards, by a dessertspoonful of orange juice in one dessertspoonful of cold sweetened water one hour before the morning feed, for babies over five months old. This must be given with a spoon, babies will not take it from a bottle. Massage of the abdomen will also assist; the nurse should rub the abdomen morning and evening with a little olive oil, for about ten minutes; the movements must follow the direction of the intestine, i.e., follow the hands of the clock. Babyhood is the time for the formation of good habits, and just as the older children in the ward are "chambered" at regular intervals, so the little babies should be held out. If before you bath the babe (after removing all clothing but the vest) you hold him over a "chamber" containing a little hot water, the position in all probability will suggest defæcation and urination. Aperients may not be given in the children's ward without the doctor's permission, and in private practice you should taboo aperients, enemata and suppositories, except, perhaps, during dentition, when a mild aperient is necessary if constipation is obstinate. Two drachms of magnesia or one drachm of olive oil or glycerine may be given—one teaspoonful of castor oil is very safe, but it is binding in its after effects. Some doctors leave the choice of aperients to the nurse; for children over eighteen months, a teaspoonful of syrup of senna, Californian syrup of figs or liquorice powder, the latter mixed with a little cold water, given at bed-time, will usually produce an action in the morning. Though liquorice powder is very popular I think the children sometimes have griping with it. In hot weather, or when there is a tendency to biliousness, Dinneford's fluid magnesia is a useful aperient; for babies over six months, two teaspoonfuls, slightly sweetened, may be given. You may be ordered to give a soap suppository; this is most effectual when the constipation is due to muscular inertia of the lower bowel.

TO MAKE AND INSERT A SOAP SUPPOSITORY.

Cut a splinter of soap about two inches long and a quarter of an inch thick; rub it in hot water until it is rounded like a pencil. To insert it, lay baby face downward across your lap, moisten the suppository and introduce into the anus, pushing gently with your finger past the sphincter.

Constipation in older children may be corrected by (1) diet, (2) exercise, (3) training. With regard to diet, children require plenty of fluid, particularly water, *between* meals. A dry diet, or one including much raw milk, is constipating, so that fluid in the shape of meat juice, broths and fruit juice should be given. If water is given at meal times, the digestive juices are too diluted to perform their function. A glass of water, cold in the morning and hot at bedtime, will help to correct constipation. With regard to *exercise*, one of the causes of constipation in children in hospital is confinement to bed; apart from the use of aperients and enemata, massage as previously described is useful treatment when practicable. For healthy children, a good walk daily and outdoor exercise help to secure action of the bowels. The bowel can be *trained* or educated to regular action, by teaching the child to go to stool every day at a given time, e.g., immediately after breakfast.

THE INFANTS' STOOLS.

Healthy babies, fed on properly modified cow's milk, have much the same stool normally as the babe fed on human milk. The stool is a golden yellow, semi-solid paste. In the first few months, two to four stools may be passed daily, after that, until a year old the bowels may act once or twice a day, and from that age the child should be so trained that there is an action once a day. A nurse must know, to a certain extent, what an abnormal stool indicates. and must be able to describe lucidly the appearance of such stools. It is especially important, therefore, that you should use your powers of observation in this direction in the children's ward. Hand-fed babies are supposed to pass larger stools than breast-fed infants, but if the diet is correct, there should be very little difference. Sometimes mothers are anxious because their babes have only small, scanty formed stools and think they are constipated; this need cause no anxiety if the babe is thriving; he is probably extracting full value from his food, leaving very little debris.

PALE CLAY-COLOURED STOOL.

This occurs in infants suffering from obstructive jaundice.

"CURDY" STOOL.

Fragments of curd are found in the stool and there may be diarrhœa. This is due to improper feeding, i.e., the feeds may be excessive in quantity and too rich in quality. The presence of undigested food irritates the bowel, this increases peristaltic movement, and the contents pass along too rapidly for digestion and absorption.

GREEN STOOLS.

These are among the gravest danger signals in the children's ward, and one to which the doctor's attention must always be promptly drawn. It is necessary to point out, however, that normal stools take on a greenish tinge if allowed to stand. The greenish tinge in the green stool proper is due to fermentation taking place in the bowel, the result of bacterial infection, or it may be due to over-stimulation of the duodenum and the rapid passage of the intestinal contents, as found in babies taking mercury (hydrarg c̄ creta—grey powder). The napkins used for green stools must be disinfected just as carefully as the linen from a typhoid patient and must be kept separate from other linen. Place them to soak in a vessel containing 1—20 carbolic lotion.

SLIMY STOOLS.

These occur in babies suffering from enteritis. If the motion is accompanied or followed by flakes of mucus, the inflammation is in the lower part of the bowel and the doctor may order lavage (washing) of the bowel with boracic lotion.

FROTHY STOOLS.

These generally contain mucus and have a sour odour. They are due to excessive sugar or starch ; the babies suffer a great deal from wind. The doctor will probably limit the sugar and add bi-carbonate of soda, grs. ii., to each feed.

OFFENSIVE STOOLS.

Babies on meat juice may pass greasy, offensive stools. The foul odour is due to the decomposition of the protein in the meat.

COPIOUS, WATERY, COLOURLESS STOOLS.

These occur in summer diarrhœa and are probably due to contaminated milk.

Most of the stools described will cause excoriation of the *buttocks*, a very painful condition. Unremitting attention as regards cleanliness is necessary. After washing with swabs of wool and a pure soap, e.g., Baumol or white curd, the buttocks should be dabbed gently with a soft, old linen towel, and a spread boracic ointment dressing applied. Calamine lotion is a soothing and efficient application for this condition.

LECTURE VI.

The Temperature in Children—Pulse—The Respiration—A Baby's Cries—Intestinal Colic, Renal Colic, Earache—Facial Expression and Appearance—Vomiting—Administration of Medicines—To Give Drugs per Rectum—Stimulants.

THE TEMPERATURE IN CHILDREN.

The temperature in children is more easily influenced than in adults. The reason of this is that the heat-regulating mechanism is more sensitive, i.e., stimulated or depressed, in children. It is not unusual for a child suffering from tonsilitis to run a temperature of 104deg. F.; consequently high temperature in a child has not the significance which it would have in an adult; a continuous high temperature, of course, means serious illness. The temperature is lowered by exposure, sleep or inactivity. The surface temperature of children is best taken in the groin. Wipe the groin free from moisture, lay the bulb of the thermometer between the skin of the thigh and the abdomen and cross the legs, or flex the thigh on the abdomen. To take the internal temperature, vaseline the bulb of the thermometer and introduce into the rectum. If the patient is a baby, it is more convenient to take it on your knee, and if it struggles, turn it on its stomach to insert the thermometer into the rectum—in this position direct the glass towards the umbilicus as the axis of the rectum has been changed. The temperature must not be taken in the rectum if the child has diarrhœa. Do not forget to mark on the chart "rectal" if the temperature has been taken in the rectum as it is three-quarters of a degree higher than when taken in the groin. The temperature should never be taken vaginally in a children's ward; it is a most reprehensible practice where there is such a serious risk from an infective discharge.

THE PULSE.

The normal pulse in infancy and childhood is of lower tension than in adult life, and the rate varies according to the age. A new-born baby's pulse-rate is from 120 to 150 per minute and this persists for a few weeks; the rate is about 110 in a child two years old, about 100 in a child three or four years and about 90 up to eight years. A good indicator of the amount of tension, i.e., blood pressure, is the fontanelle; if the fontanelle is depressed the blood pressure is low and *vice versa*. A baby's pulse is best taken in the groin or at the temporal artery. Never attempt to take a child's pulse after an attack of crying, coughing or vomiting because it will be quickened. It should be taken whilst the patient is sleeping if possible.

THE RESPIRATION.

The respirations of a new-born infant vary from 30 to 60 per minute. During the first year they may be from 26 to 30 and up to the seventh year about 20 to 24. If a baby is ill enough to require its respirations recording it is most important that they should be carefully and accurately taken. Do not take a child's respiration by placing your hand on his chest, this will make him restless and *increase* the respiration rate; count the rise and fall of the bedclothes. Where the breathing is embarrassed and the child restless, the nostrils often dilate, and the respirations can be more correctly counted by watching the movements of the nostrils.

A BABY'S CRIES.

The principal means by which a little child makes known its pains or wants is by crying, so it is necessary for you to learn to recognise and understand the different cries. A baby cries from (1) hunger, (2) discomfort, (3) pain, (4) temper, (5) habit, (6) for change. The cry of hunger may be either fretful or sharp and passionate and the baby sucks its fingers; the crying ceases when the baby is fed. The cry of indigestion is the same as that of hunger, but does not cease after feeding. The cry of pain is usually sharp; the child's face is contorted and the legs are drawn up toward the abdomen. If the pain is not severe the child simply moans. Sometimes the babe drops to sleep from exhaustion, only to waken again, usually with a scream. The cry of temper is prolonged and violent and the baby stiffens its legs and throws the arms about; this cry probably ceases when his majesty is nursed. The cry of weakness is feeble whining. The cry of habit ceases if the baby's attention is distracted by means of a rattle, etc. There are also the characteristic cries of certain diseases such as the short, sharp, shrill scream of meningitis, or the similar sudden shrill cry heard in children suffering from hip-joint and other bone diseases, the nasal cry of congenital syphilis or the short, "catchy," suppressed cry of bronchopneumonia. A very ill baby does not cry lustily or loudly. The observant nurse can learn to recognise these cries and can thus be of great assistance to the doctor in his diagnosis by describing them accurately. Babies often cry for a change when they are bored, and a good energetic cry does them no harm, it is just a healthy lung exercise.

INTESTINAL COLIC, RENAL COLIC, EARACHE.

The cause of a baby's cries, apart from hunger, etc., is pain, and this is most commonly due to intestinal colic (the result of flatulence), earache, or more rarely, renal colic. Babies, even healthy ones, suffer a great deal from indigestion, which gives rise to wind and stomach-ache. The nurse must endeavour to discover the cause; it may be due to unsuitable food, e.g., too much sugar or starchy material, or to constipation. To relieve colic, the best thing is heat within and heat without. A few teaspoonfuls of really hot water (not hot enough to scald) given by mouth will often relieve. In hospital a weak peppermint mixture is usually kept in the children's ward, and a few drops of this are given in hot water *without* sugar. Heat should be applied to the abdomen if the colic is severe, either as a fomentation, a hot water bag (a quarter filled only) protected in a flannel bag, or on the district a hot salt bag is very useful. The feet *must* be kept warm. Massage may relieve, but experience proves that it sometimes aggravates the pain, and in any case, rubbing a tense abdomen is worse than useless; when the colic is severe the abdomen is rigid. Mothers must always be warned against patent soothing medicines for this condition. Most of these medicines contain opium in some form or other and reports in the Press of babies' deaths from narcotic poisoning through soothing syrups are not uncommon. You may suggest a pinch of bicarbonate of soda in water, or two teaspoonfuls of dill water, but the *cause* must be sought for and removed.

EARACHE.

This is a most painful affection. Earache may be due to a small abscess which forms in the ear and these are exquisitely painful; more often it is due to the cutting of a tooth. The cry is continuous and the child may constantly put up its hands to the head which it rolls from side to side. You may be ordered to apply heat or a little warm oil to the ear. If fomentations are applied they need renewing every ten minutes to be of any use. The rubber bag, filled with water at a temperature of 130deg. F. and encased in a flannel bag, or the hot salt bag are both better methods of applying heat for earache. If two salt bags are used, keep one between two plates in the oven and apply alternately as they cool. Tiny bags of double muslin with salt in them, tied up cone shape, made hot and introduced into the ear, get nearest to the seat of pain and give relief sooner than larger applications. Leeches are sometimes ordered for earache and soon give relief. Syringing with warm boracic lotion may be ordered.

OIL IN THE EAR.

Stand a test tube with about a quarter of an inch of oil in it in a cup of fairly hot water; draw the lobe of the child's ear upwards and backwards, hold the head to the side, and pour the warm oil into the meatus. In a few minutes dry the ear and introduce a little wool (well-pulled so that it is absorbent). In private practice the oil may be warmed in an egg-cup in the oven and dropped into the ear from a warm teaspoon.

RENAL COLIC.

It is said that renal colic in children is commoner than is supposed. The symptoms are difficult to differentiate from those of intestinal colic. The child screams continuously and the knees are drawn up as in intestinal colic. Applications of heat to the abdomen give no relief and pain which cannot be relieved by simple remedies indicates the need for medical advice. Put the child in a hot bath and send for the doctor. After these attacks the wet diapers should be examined for particles of grit which are the sign of gravel.

ATTITUDE IN DISEASE.

A certain amount of information may be got from a sick child's attitude in bed, and you should accustom yourselves to the various positions adopted in different conditions. A child at ease usually lies on his side or sometimes in the prone position. If there is abdominal pain the legs are drawn up. If there is head or ear-ache, the head may be rolled from side to side and the little one may hold it with both hands. If respirations are increased, the child usually lies on the back until propped up. Retraction of the head with arching of the spine signifies meningeal trouble. "Night starts" with sudden cries may mean acute hip joint disease. Now if the attitude, the cry, then the expression and general appearance of the face, are carefully noted an intelligent nurse will be able to offer the doctor a report which will be of real value in assisting him to a diagnosis. Observation in the children's ward is imperative; children alter so rapidly and so subtly that only close watching will teach you to recognise the fine shades of difference which show improvement or the reverse. That is one of the joys of children's nursing—they really do seem to have one foot in the "Never never land" and a few hours later will vigorously resist any attempt to feed them!

FACIAL EXPRESSION AND APPEARANCE.

In acute pulmonary conditions the expression is heavy and anxious, the child takes very little notice, the eyes are bright and the face flushed. If pain is present as in meningitis the brows are knitted. In epidemic enteritis the eyes are sunken and have a staring look. Children with adenoids breathe through the mouth and this gives a vacant, stupid expression. In meningitis, children sleep with the eyes partly open, also in other diseases where there is great weakness, though this is not always a serious symptom. Puffiness of the face usually indicates kidney disease, and blueness (cyanosis) is met with in respiratory and cardiac conditions; "blue babies" is the term applied to babies in hospital admitted with congenital malformation of the heart.

VOMITING.

An attack of vomiting may usher in any of the infectious diseases, or it may be one of the first symptoms of acute abdominal conditions, e.g., appendicitis—when it is reflex "the stomach speaking for the whole belly." In addition to the time of vomiting, i.e., before or after food—the nature and quantity of the vomit, it is most important in the case of children that nurses should observe carefully the *manner* of vomiting: whether the child ejects the vomit forcibly in jerks or whether it is the "possetting" of an over-loaded stomach or simply the "throwing up" of an irritated stomach. Children who have pyloric stenosis eject the contents of the stomach in jerks, and as the condition can only be relieved by operation, it is most essential for the nurse to recognise and accurately describe what is an important symptom. Cerebral vomiting, i.e., vomiting due to brain or meningeal disease as in meningitis, occurs independently of food; the child may vomit quantities of fluid with very little distress.

ADMINISTRATION OF MEDICINES.

Although you have been given rules for the administration of medicines, their importance cannot be too often insisted upon, especially in the children's ward. No nurse is allowed to serve medicines in the children's ward of this and many other hospitals until she has passed a test examination showing that she appreciates the gravity of the duty. (1) Never speak to anyone or think of anything else when measuring a medicine. (2) Measure exactly. Read the label before pouring out the medicine and hold the bottle with the label uppermost. Hold the medicine glass with the graduations on a level with your eyes. (3) Shake the bottle. Serve the medicine punctually according to the clock (not when you return from lunch or dinner, which may be twenty minutes before medicines are due). In the children's ward medicines should be measured by the best graduated glass measures procurable and if there is danger of the child biting the glass (as they are thin) give it in a cup. Earthenware measures used in hospital are often as much as a quarter of a drachm out, and this, if an error of excess, is a most serious thing in the service of medicine for children.

Nowadays medicines are dispensed in such palatable forms that children rarely object to take them. Virol has to a great extent superseded cod liver oil or this is given in such a palatable emulsion that the children look upon it as a treat. Children who are very ill nearly always take drugs well; they are too weak to protest; as soon as they refuse them, you may congratulate yourself on the fact of their improvement. Never tell a child that a nasty medicine is nice—tell the truth, bribe with a sweet and flatter a brave boy! Above all, do not give powders in jam or milk; children are turned against valuable foods in this way. Powders may be given to babies as follows—moisten a teat or your perfectly clean finger and take up the powder on it, then put it in baby's mouth. Oil is given in a warm teaspoon. It is useless trying to give a baby a drachm at once, because part of it will trickle out at the sides of the mouth; give half a drachm in the spoon at a time. The different methods of giving drugs are explained in "Modern Medical and Surgical Nursing for Probationers." Children do not tolerate opium well, but chloral—which is sometimes given rectally in cases of convulsions—and belladonna are borne quite well by young infants.

To Give Drugs per Rectum.

Chloral and bromide may be ordered to be given rectally. Attach a Jacque's catheter, No. 8 to the barrel of a two-ounce glass syringe. Pour the solution into the barrel, and replace the piston. Lubricate the catheter, introduce about four inches into the rectum and push down the piston *very* slowly until the barrel is empty. Withdraw the catheter gently and keep baby still for a time.

Stimulants.

Stimulants are ordered in minute doses where there is much exhaustion in acute diseases—e.g., epidemic enteritis or pneumonia. The stimulant should be well diluted, but do not mix with a whole feed because the child may not finish it. Brandy and water is conveniently given by a pipette or spoon, the bowl of which has been bent to form a channel.

LECTURE VII.

Rickets—Treatment of Rickets—Cold Douche—Laryngeal Spasm (Croup)—Convulsions—Scurvy.

We shall now consider, briefly, *diseases* due to improper feeding. The commonest examples seen in the children's ward are rickets, marasmus or mal-nutrition, occasionally scurvy and in summer or autumn, that most fatal disease in young children, epidemic enteritis, or as it is popularly known in hospital, "D and V" (diarrhœa and vomiting).

RICKETS.

Rickets is one of the commonest diseases of early childrhood. Its exact cause is not known, but it is found to occur where there is a lack of sufficient *fat* in the diet. The disease is not due to an insufficient *amount* of food, but to the fact that a disordered digestive apparatus cannot absorb sufficient lime salts into the blood stream. Now, the lime salts are the bone-making material; they are deposited in the cartilaginous parts of the baby's bones, the cartilage disappears in time and bone takes its place. It is said that the inability of the blood to take up lime salts is due to a great extent to the lack of proteids, but, above all, to the lack of *fat* in the diet. Breast-fed babies are rarely rickety. Besides improper feeding, poverty, with all it entails in the way of unhygienic surroundings, predisposes to rickets. It is important that you should be able to recognise rickets as *early* as possible, so that on the district you may be able to advise the mother to get medical advice, in order that remedial measures may be taken before the disease is far advanced. Rickety children are pale, fat and flabby; the flabbiness is a particularly early symptom. The muscles are flaccid and this is seen especially in the abdominal muscles, giving rise to the typical "pot belly." This condition is due to loss of tone in the bowel, which becomes distended, the flaccid abdominal muscles yield, and "pot belly" is the result. Rickety children are nervous, fretful and restless, particularly at night. They will *not* lie under the bedclothes for this reason—in rickets there is an excess of carbon in the blood which must be eliminated; when the quantity of carbon is normal the lungs are able to cope with it, but when excessive as in rickets, there is a craving for oxygen; this the child unconsciously attempts to satisfy by throwing off the bedclothes in order to get air (oxygen) to the skin, and thus relieve the lungs. That is why fresh air and a well-ventilated room are so necessary in the treatment of rickets, also why there should be no hangings, etc., about the cot. Further, the child is hot and if there is tenderness of the limbs, the weight of the bedclothes causes discomfort. There is profuse sweating about the head and neck, and when you see this in a child, you may look for other signs of rickets. When the disease is established it is quite easy to diagnose. All the bones are affected. The head is large and square, with gaping fontanelle and typical bulging forehead; dentition is delayed. The chest is "pigeon breasted," and there may be beaded ribs. The ribs are thickened at a point some distance from the sternum; this thickening is felt like a bead, so the term "rickety rosary" is sometimes used. The long bones are curved (knock knees—genu valgum, or bow legs—genu varum), and there is thickening at the ankles and wrists. The following description of a typical rickety child will impress the prominent symptoms on your mind. "The head of a philosopher, the face of a monkey, the chest of a greyhound, abdomen of an alderman, and the legs of a grand piano." These are the outstanding signs of rickets. Although not a fatal disease in itself, rickets breaks down a child's resisting power, so that it is an easy prey to the invasion of disease. The sequel to rickets in girls as seen in our maternity wards, in the way of deformed pelves, should impress upon you all your responsibility as educators of the public, with regard to the proper feeding of infants. Children suffering from rickets are very prone to inflammation of the mucous membranes, and if they get inflammation of any part of the respiratory or alimentary tract, a severe attack of laryngitis, bronchitis or enteritis is almost sure to follow.

TREATMENT OF RICKETS.

It is absolutely necessary that the child should be placed under medical supervision. The diet will be regulated so that it contains a sufficiency of fats and proteids, and a minimum of carbo-hydrates (sugar and starch). In hospital, this is easily arranged, but on the district the provision of a suitable diet bristles with difficulties. Milk should form a staple part of the diet, and when you remember the difficulty in procuring pure milk, the obstacles in the way of keeping it pure, and the readiness with which these children succumb to an attack of diarrhœa, which would be caused by contaminated milk, you have some idea of the odds a poor mother has to face. All artificial foods containing starch must be avoided. Fat in any form is good; it may be given as cod liver oil or Virol, the latter being particularly good for these babies (as you know by experience in the wards) it is so easily assimilated. After the first year, eggs, meat juices, gravy and broths, and well-boiled oatmeal may be given. On the district, finely shredded suet* baked in the milk (one dessertspoonful to a pint, unless there is diarrhœa, when a teaspoonful is sufficient) is a convenient, cheap method of introducing fat into the diet. A famous Scotch surgeon treats his hospital cases of rickets with "pease brose." This is a gruel made from pease meal in the same way as porridge, flavoured with a nut of butter and salt and eaten with milk. Abundance of fresh air and sunshine are imperative. The child should be warmly but not heavily clothed, the limbs and abdomen especially need warmth. In hospital these children sleep in flannel bedgowns with a drawstring in the hem at the foot, so that they are always covered; they are especially liable to respiratory diseases, and must not be allowed to get chilled. Rickety children cry out when moved; this is due to tenderness of the limbs, so the child must be handled as little as possible, and always very gently. The children must *not* be allowed to stand or to crawl, or the legs and arms will certainly become curved. In hospital, we occasionally put these children into long splints so that they cannot crawl round their cots. A point to remember in the application of these splints is that they should be applied loosely. Occasionally massage and cold douching are ordered. The douching is done as follows:—

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* On the district, "Atora," a finely shredded suet, may be recommended. It is convenient to use, as it is put up in ½ lb. and 1 lb. boxes. This is sterilised and keeps fresh for a long time.

COLD DOUCHE.

The douche is given as a tonic and is also frequently ordered for children who are suffering from nervous diseases such as chorea, or for those who are debilitated and anæmic, as it improves the appetite and general condition. The child should stand or kneel (a rickety child must sit) in a bath containing a few inches of warm water. The nurse dips a large sponge in a bowl of tepid water and wrings it out about six inches above the spine, or a small watering-can may be used if only a spray is required. This is done for three minutes; the child is then removed from the bath and rubbed briskly with a fairly coarse towel for five minutes. In the case of rickety children who will not be playing about (which promotes a good reaction), a warm bottle must be put to the feet in bed and a hot drink given after the douche. It is usually ordered to be given after the morning bath.

LARYNGEAL SPASM (CROUP).

These children may get an attack of "crowing" due to laryngeal spasm. The breath is held until the child gets black in the face and seems in danger of suffocation; the child gives a long crowing sound and the attack is over for the time being. This usually occurs during the night and is very alarming to a nurse who has not seen the condition before. Take a small towel, piece of lint or wool, and wring out of hot water; let down the side of the cot, draw the baby's head on the pillow over the side, so that it hangs a little over the edge of the bed, apply the moist, hot application to the throat and upper chest. One or two drachms of ipecacuanha wine may be given to act as an emetic.

CONVULSIONS.

Children suffering from rickets are especially prone to "fits." These may be due to constipation, dentition or some disturbance of the digestive tract. Rickety children are subject to constipation due to the atonic condition of the bowel, but the constitutional treatment is usually sufficient to remedy this. In any case, careful watch must be kept that the bowels are moved daily. Care must be taken on visiting days that nothing is given which can upset the stomach. The treatment of convulsions (as far as the nurse is concerned) is to apply cold to the head, heat to the feet, and to give a drachm of castor oil to empty the bowel after the fit is over. If constipation is present the bowel must be cleared by an enema and this must be given very gently, by gravitation preferably, when the child has recovered from the fit. The cold application to the head is to relieve congestion of the brain and the popular treatment of a hot bath, which draws the blood to the surface of the body, is given with the same object. I sometimes think the bath excites the child, thus aggravating the condition, and an alternative method is to wrap the abdomen and legs in a blanket wrung out of very hot water, and to apply an ice-cap or cold cloth to the head. If giving the bath, immerse the child to the waist only.

SCURVY.

This is a somewhat rare condition, also due to improper feeding, and occurs in subjects who have been fed on artificial foods. For instance, babies who are fed on condensed milk, certain proprietary foods, sterilized milk, or sailors who live on tinned meats and a diet from which fresh *raw* foods are lacking, develop scurvy. Scurvy, therefore, is a disease due to a lack of fresh or *raw* food. The cardinal symptom of this disease is tenderness of the limbs. A child suffering from scurvy screams if it only thinks it is going to be touched. A nurse once remarked in aggrieved tones that such a child screamed before it was touched; of course it did, poor lamb! It feared the pain it knew to be the result of handling. What happens in scurvy is this. There is a pouring-out of blood between the periosteum and the bone. This causes bulging of the periosteum with the result that there is pressure on the nerve endings, so that the slightest touch, to say nothing of pressure in lifting, is agony to the poor baby. The most experienced nurse dreads dressing bone injuries—there is no more painful dressing in the children's ward than the packing of a shaft which has been opened for osteomyelitis, in fact, many doctors give an anæsthetic for the first few dressings; you would all be specially tender with these little patients. Now the scurvy baby probably suffers as acutely when handled, so you will remember this and move him as little as possible. These children should wear open garments and everything, washing, feeding, etc., should be done without removing them from the cot. In advanced stages there is swelling of the limbs, the gums may be a purplish colour and easily bleed, and there is sometimes bleeding from the bowel. There may be hæmorrhage into the skin, scurvy being practically a disease of breaking-down blood vessels. In scurvy there is marked pallor, anæmia being a prominent symptom. Fortunately, the disease yields rapidly to treatment in the form of altered diet. The patient is put on raw milk, raw meat juice, fresh fruit juice, etc. (sailors on voyage take a supply of onions, lemons, potatoes, etc.). Spontaneous fracture may possibly occur in these children, so that in severe cases (which are rare) bed cradles should be used to take off the weight of the clothes. A mother on the district may remark to you that she fears paralysis for her little child. This should put you on the alert at once—especially if there is a condensed milk tin on the table! These children will not move, not that they cannot, but because they fear pain and so will not. Fresh air and sunlight are of great importance in the treatment of scurvy. The treatment of both these diseases, rickets and scurvy, may be summed up in (1) regulated diet, more proteids and fat, especially fat for rickets and more *raw* food for scurvy. (2) Abundant fresh air and sunshine. (3) Light warm clothing, adapted to climatic and atmospheric conditions (chills to be carefully guarded against). (4) Gentle handling.

LECTURE VIII.

Epidemic Enteritis or Summer Diarrhœa—Nursing—Washing Out the Bowel—Washing the Stomach—Feeding—The Stools—Prolapse of the Bowel.

EPIDEMIC ENTERITIS OR SUMMER DIARRHŒA.

This is a most fatal disease among babies, and one with which you will become all too familiar as district nurses or Infant Health Visitors. It occurs chiefly in hand-fed infants during the summer or autumn months. All babies who suffer from gastro-intestinal weakness are likely to be attacked, so that great vigilance is necessary in our wards. The disease is due to bacterial infection of the intestine and the stools are *highly infective.* The bacteria gain an entrance into the bowel and under favourable conditions multiply rapidly. The toxines (poisons) are taken up by the blood, and a general toxæmia is the result. Unless a case is infected in the children's ward or nursery, a rare occurrence in Poor-Law institutions, happily, in these days, nurses have not the opportunity of seeing the early symptoms of epidemic enteritis. At first the infant is restless and refuses all food. There is great thirst and the temperature may be anything from 102deg. F. to 105deg. F. Then vomiting occurs; at first food is vomited and later the vomit consists of greenish yellow mucus; the babe draws up the legs to the abdomen which is tense and hard. After passing a stool the pain abates, but in a short time there is colic again and another evacuation. The motions soon become green and are very offensive. It is usually at this stage that you will first see the baby if you are a Health Visitor, that is, if you are the right kind of Health Visitor! An interested "baby inspector" keeps in touch with the mothers in the districts where "D. & V." is most likely to rage, and they send for her before the doctor, because they will have nothing to pay. You will recognise the condition at once by the signs and must advise medical attention immediately. This is urgent, and there must be no waiting to see whether baby improves. If there is extreme poverty and the mother is unintelligent, then the best chance for that baby is the Poor-Law Infirmary or other local hospital, and you will probably have to advise as to how the child may gain admission to either institution. Meanwhile withhold all food, and give nothing but water; the infant must be kept as warm as possible. The water will probably be vomited back at this stage, but it is useless to tell the mothers to give the baby nothing, so it is best to advise a little *boiled* water. Beyond this, you must, as far as possible, adapt your training in the nursing of these cases in hospital to the conditions you may be working under. This is difficult, but the results are wonderfully encouraging considering the odds one works against. In lecturing on children's nursing, particularly on this branch, I find it difficult to divorce hospital from district work. You are not likely to be at a loss in hospital, where you have almost ideal conditions to work under, someone always to refer to, and everything, or nearly every appliance, essential to skilled nursing. It would, perhaps, be better training if you had to "make do" more. On the district your responsibilities as teachers will be so great that I am anxious you should realise them now and endeavour earnestly to take in the teaching given you as probationers. So many nurses trained in Poor-Law take up work as district nurses, or Health Visitors, and those of you who do will find that the question of infantile mortality, and the influence of epidemic summer diarrhœa on that mortality, will loom as importantly on your horizon then, as does the healing of a wound by first intention to-day—at least, I hope it will, because then you will be valuable workers for the nation's weal, and you will certainly be working along the best of all lines—*preventive* lines. Babies admitted to hospital with diarrhœa and vomiting usually come in with a history of "everything passing through him," and presenting a pitiful appearance which is quite typical. The eyes are sunken and have dark rings under them; the fontanelle is depressed, the face and body are pale and the extremities cold; the pulse is soft and feeble and temperature sub-normal. If the infant is admitted at a later stage, there is profound collapse; the skin is dry and inelastic, there is marked emaciation, the respirations are feeble and the pulse scarcely perceptible. The babe is too weak to cry or even whine.

NURSING.

Again we come back to the first principles, *rest* and *warmth*. In grave cases an attempt may be made to make up some of the fluid which has been lost. The treatment depends to a certain extent on the stage of the disease, but the first rule of "starve for twenty-four hours" is rarely contra-indicated; this rests the stomach and bowel and gives them a chance to recover. Place the infant in a bath, temperature 102F., with as little delay as possible after admission; this stimulates and warms it. Place some cotton wool to warm, and wrap the babe cosily in plenty of this. Wool is cheaper than blankets—which need changing and washing probably after an hour's wear—and it clings more closely to the baby. Place the child in a cot, near the fire, and surround with hot bottles. The ordinary children's ward is not warm enough for these babies, they should be nursed in a side ward if one is available. Castor oil, one drachm, is usually ordered to clear out the bowel. Mothers *cannot* understand why the doctor orders castor oil for a baby with diarrhœa; it is well worth while explaining to them that it is given to remove anything which is irritating the bowel. Always remember that what you tell these mothers will be common property in a court before many hours are over. A sick baby is one of their most engrossing subjects of conversation, especially if it has been visited by a doctor and inspector. Much useful teaching is thus disseminated from doorsteps in slums. If the baby is collapsed, five minims of brandy hourly may be ordered; this is given in a teaspoonful of cold water and is best given slowly with a pipette. Some doctors have the bowel washed out as a routine treatment.

WASHING OUT THE BOWEL.

The following things are required:—Two quarts of boracic lotion 1-60 or normal saline at a temperature of 100F. a soft rubber catheter, size 10, oil as lubricant, a glass funnel and a vessel to receive the returned fluid. Don the mackintosh and flannel aprons; sit near the fire; lay the baby on your lap, draw the buttocks over the edge of the side and slightly elevate your knee on which the child's pelvis rests. Lubricate the tube and allow some lotion to flow through it; introduce with the lotion slightly flowing just past the sphincter—the fluid distends the rectum and the tube can be introduced into the bowel more easily. Pass slowly a distance of about six or seven inches. The main point to remember in this lavage is that the bowel is inflamed and the funnel must be raised very little so that the fluid distends the bowel painlessly. After about a pint has been injected, syphon by lowering and inverting the funnel into the bowl. The irrigation is continued until the fluid returns clear.

Washing the Stomach.

In certain cases the doctor may order the stomach to be washed out. As these infants are practically always collapsed, unless you are expert, it is safer for the doctor to do this. A catheter, size 10, is attached to a rubber tube by means of a glass connection tube. The rubber tube is fitted to a glass funnel. The lotion ordered is prepared; the child is wrapped up in a blanket, arms to sides (not that these infants struggle, they are too weak, but a little protesting hand may try to pull away the tube). Stand on the right side of the cot; lubricate the tube with glycerine, depress the infant's tongue with your left forefinger and with your right hand pass the tube rapidly into the back of the mouth—through the pharynx into the æsophagus. Pass about ten inches. About six ounces of solution are poured into the funnel and allowed to pass slowly into the stomach; the funnel is then inverted into a receiver below the level of the bed for the fluid to return. This is repeated until the fluid returns clear. If you are washing out the stomach in older children, more fluid can be poured into the stomach; for these cases you will need a mouth-gag and an assistant. Older children might bite off the tube and swallow it—when it could only be recovered by an operation. In the case of an older child, he should lie on his back, arms pinioned to his sides in a blanket and the gag fixed in position. The assistant stands at the left side of the cot holding the gag in position with her left hand; she should place her right hand on the forehead to keep the head steady. The nurse performing the lavage works from the right side of the cot as described above. In desperate cases subcutaneous injections of saline have proved valuable. Directions for their administration are given in "Modern Medical and Surgical Nursing for Probationers."

Feeding.

This is resumed very warily. Usually albumen water, half an ounce at a time, is given first. After this, whey, barley water and cream may be given, but the feeding must be carried out most cautiously, and strictly in accordance with medical orders.

The Stools.

The babe may have anything from ten to twenty stools in a day, and you must remember that they are *highly infective* and *must* be treated exactly the same as typhoid stools. All soiled napkins must be placed in a vessel containing corrosive sublimate 1-1,000 or carbolic 1-20. Families living in tenements often share a common boiler which they may use once a week! In these circumstances all you can do is to preach the doctrine of plenty of soap and water, and impress upon the mother the necessity for putting the soiled linen under water *immediately* it is removed; this greatly minimises the danger of infecting others. If you think of the flies in poor houses, how they cluster around any discharge, then buzz away and settle on the basin of milk belonging to the baby next door, you will see at once the necessity for unremitting care in the matter of infected linen. The buttocks quickly become excoriated with the constant evacuations, and all that can be done is to keep them clean with plenty of hot water and a pure soap, afterwards applying a boracic ointment dressing. During convalescence, do not forget that these infants readily take cold, because of lowered vitality and the emaciation—so they must be warmly clad.

PROLAPSE OF THE BOWEL.

In these cases, as a result of the constant diarrhœa, the sphincter of the anus may relax and the lower bowel protrude. This condition is apt to frighten a mother or young nurse who does not know how to return the bowel. The mother should be instructed to lubricate the fingers with oil or butter and to gently push the bowel toward the anus when it will slip back itself. If there is difficulty a cold cloth will facilitate the passage of the protruding portion. The condition will probably be recurrent until the sphincter recovers its tone.

LECTURE IX.

Respiratory Diseases—Ventilation—Steam Kettles—Position of the Child in Bed—Temperature, Pulse and Respiration—The Bowels and Bladder — Feeding — Cough, Expectoration, Dyspnœa and Pain — Pleural Effusion — Whooping Cough (Pertussis).

RESPIRATORY DISEASES.

These include laryngitis, bronchitis, pneumonia and whooping-cough. We will consider the various nursing points in order of importance.

VENTILATION.

The ventilation of the room is of primary importance in the nursing of all respiratory diseases; warmth and an equable temperature of the surrounding atmosphere are most essential. The room should be kept at a temperature of 65 F. or thereabouts, and in the case of infants, 68 F. is not too warm. The small amount of air a child can take into his lungs should be as pure as possible; a close atmosphere makes it difficult for him to breathe. Though fresh air is imperative, do not forget that sudden draughts often induce coughing, so take care to open doors, etc., cautiously.

STEAM KETTLES.

A moist atmosphere is sometimes desirable and to secure this a steam kettle is used. Curtains may be used over a cot having a curtain-rod, and these are preferable to a tent because they do not exclude the air, but where there is no rod the half tent is used. Place a screen round the head of the cot, arrange a sheet over it and around it, tent-fashion. Stand the stove and kettle safely in a bowl or vessel on a locker or firm table and direct the spreader and tube into the tent, well above the child's head; do *not* direct it towards the face. Watch the following points: (1) The spout must be turned away from the cot until the water is steaming properly; (2) Boiling water must be at hand to replenish the kettle when necessary, so that it is kept going continuously; (3) the kettle should never be more than *three parts full* or the water may spurt out and scald the child; (4) if the kettle is taken away in the night the child may be chilled—when its use is to be discontinued, it is better to omit it in the middle of the day, rather than during the night when the atmospheric temperature is lowest. The doctor may order some antiseptic, such as Sanitas, to be added to the water, one drachm to a pint is the usual strength. On the district, where the patient is often nursed in the kitchen, a tinsmith will, for a few pence, provide a tin tube with spreader for fitting on to a domestic kettle. I prefer this to the bronchitis kettle for use on the district, because it is safer; the domestic kettle is heavier and not so likely to be upset.

POSITION OF THE CHILD IN BED.

This is most important. The child must be well supported in the position in which he breathes most comfortably, which is, usually, propped almost upright. Excepting in the case of quite young infants, the patient often selects the most comfortable position for himself. The shoulders must be covered and the child must be arranged in such a manner that he is not constantly slipping down, which is bad for his breathing and certainly bad for the skin of his back. A bed-rest should be used in hospital for older children if pillows are scarce; a pillow may be placed under the knees. You *must* take pains to arrange the patient comfortably or to support him in the position he adopts or he will not rest. On the other hand, no attempt must be made to make him assume a position he does not appear to want, or he will be irritable, and the breathing more disturbed. Now, in the case of a feeble child or young infant, the position must be changed periodically because of the possibility of congestion of the lungs if the patient is kept too long in one position. Nurses are too apt to leave a sick child alone as long as he is quiet; this is *not* "trained" nursing. The babies should be lifted from their cots in the children's ward and nursed before a fire, if possible, three or four times a day for at least ten minutes; this is most conveniently done at feeding and changing times. There is some sort of prejudice against taking children out of their cots in hospital, but wherever it is practicable, good nursing demands that the child should be lifted occasionally for the sake of both change and rest. Children suffering from respiratory diseases are so restless that they throw off the bed-clothes and so run the risk of a chill which may lead to an aggravation of the illness. If you cannot give undivided attention to the child, envelop him in a light old blanket, sack-fashion, or secure the blanket by its corners with safety pins to the mattress and pillows, but do not fasten it down in such a manner as to restrict the free movement of the chest. The clothing should be woollen and *loose* enough. A cotton wool jacket from the neck to well down over the abdomen is useful, but when discarding it, do so by degrees, removing a little wool every day.

TEMPERATURE, PULSE AND RESPIRATION.

The temperature, pulse and respiration should be taken—if possible while the child is asleep—and recorded four-hourly. If the temperature is very high it should be taken again with another thermometer which must be held in position all the time, to make sure it is quite correct. To reduce the high temperature which accompanies pneumonia, tepid sponging and hot baths are mostly ordered for children. Tepid sponging reduces the temperature by cooling the skin, the hot bath (temperature 104 F.) by drawing the blood to the surface, opening the pores and inducing perspiration. Watch for collapse with either treatment and have ready stimulant, hot bottles and blankets. As you remember, a baby's pulse is normally about 120, and when the temperature is raised, the pulse becomes so rapid that it is difficult to count. The child is irritable and often cries when touched, so that it is difficult to get a true count of either pulse or respiration. It is useless to take them, the respiration especially, after a fit of crying or coughing. I think the pulse is most easily taken at the temple and its character, frequency and rhythm, should be carefully noted so that you can report to the doctor. With regard to respiration, in addition to the rate, note whether it is wheezy or otherwise noisy, whether there is dyspnœa, and in which position the child breathes most easily. There may be "sucking in" or recession of the chest wall at the diaphragm and at the muscles about the neck. All these are points to be reported on and your intelligent observation of them will teach you a great deal. The children usually lie on the affected side to give the sound lung full play.

EXAMINATION OF AN INFANT'S CHEST.

The most convenient position for the doctor to examine an infant's chest is as follows:—For the back, hold the child on your left arm with his head resting against and directed over your left shoulder; for the front, he may lie across your knee; you will probably be seated before a fire, and unobservant nurses need reminding that they should sit in such a manner that neither the baby's nor the doctor's face is scorched. Great care must be taken to guard against unnecessary exposure.

THE BOWELS AND BLADDER.

The bowels must be carefully watched. You remember that constipation must be avoided in respiratory diseases especially, because if flatulence occurs as the result of constipation, the breathing will certainly be more embarrassed. In children who are very ill there may be suppression of urine, and if no urine is passed for twelve hours the fact must be reported to the doctor.

FEEDING.

In private nursing the feeding is often left largely to the nurse's discretion. A safe rule to remember is, that while the temperature is high, the amount of food should be *reduced* and the quantity of water *increased.* Do not give too much milk; it is a good food, but a child may get too much of it. Dilute milk with water, soda water or barley water. Give meat broths, jellies, whey, oranges, grapes and abundance of water. It is surprising how little food sick children need so long as they are given plenty to drink. The digestive organs *cannot* deal with food during fever, because the digestive secretions are greatly diminished. The utmost care must be exercised in feeding children suffering from respiratory diseases. Should a fit of coughing begin, feeding must be suspended until it is quite over; the breathing is often distressed and swallowing increases this. Small quantities should be put into the mouth at a time, and a pause made between each mouthful. The nurse who can feed a child suffering from whooping cough, without an attack of coughing and vomiting occurring during the meal, has mastered a very difficult nursing point. And it *is* possible to do it if time is taken. You will have difficulty in getting children who are convalescent to take sufficient nourishment. They are no longer thirsty after the temperature falls, and turn from food with distaste. Perseverance, coaxing, and a little judicious bribery will accomplish much when the nurse is keen enough to try. A well-trained nurse must always feel conscious of failure if she has to report to the doctor, "He *won't* take it."

COUGH, EXPECTORATION, DYSPNŒA AND PAIN.

For the sake of nurses who have not had a doctor's lectures on children's diseases I may just mention briefly these four points which call for consideration in respiratory diseases. The cough differs according to the disease and part affected. In laryngitis there is the croupy, hoarse cough; in bronchitis it is harsher, dry and short at first; later it is looser and comes on in paroxysms. In pneumonia, the cough is typically dry, short and "catchy" due to the child trying to limit the chest movement, probably because of the pain coughing causes. When the coughing bout is severe the nurse must support the child until it is over. A drink of hot water relieves it sooner than anything else. You must note whether the cough appears to be accompanied by pain, and whether there is *expectoration.* In babies and young children, the secretions from the lungs are invariably swallowed, so that it is sometimes said that children do not expectorate. I do not want you to take this too literally; secretions from the lungs are *coughed into the mouth* and will certainly be swallowed if no attempt be made to prevent it, but a considerable amount can be removed by an alert nurse. A tray with a small bowl of solution of bi-carbonate of soda, and a pile of gauze or old linen squares should be kept at the bed-side for this purpose. The expectoration is removed from the mouth in one of the squares previously moistened in the solution, and immediately burnt. The expectoration in pneumonia is very sticky and difficult to remove, but the alkaline solution facilitates this. The expectoration is always scanty at first, but as the disease progresses it becomes more copious and profuse. Children old enough to understand should be encouraged to expectorate, and an expectorator must be kept within reach for the purpose. *Dyspnœa* is a very trying symptom in these cases and can only be relieved, as far as nursing is concerned, by posture. With regard to *pain*, it is difficult to locate in young children, who often point to the abdomen, when the pain is actually in the chest. In pneumonia abdominal pain *may* be present at the beginning of the attack and this must be kept in mind. Notice whether pain is present constantly or is only apparently felt during coughing.

PLEURAL EFFUSION.

When this condition is present the important point to remember is the danger of the fluid pressing on the heart with resultant syncope. The child must be kept absolutely quiet in the recumbent position and moved very gently. Washing, feeding, etc., must all be done in the cot. The nursing of children after the operation for empyema differs very little from the nursing of adults. The child must lie on the affected side to allow of free drainage and to give the sound lung full play. The children are usually prescribed "blowing exercises" and will probably make soap bubbles with glee or will try to blow a trumpet vigorously when the "blower" has ceased to afford diversion.

WHOOPING COUGH (PERTUSSIS).

The nursing of this disease is essentially the same as the nursing of other respiratory diseases, excepting that the child is isolated with the nurse, as it is highly infectious. The cough occurs in paroxysms which begin with a number of short expiratory coughs, followed by one long inspiration, which is accompanied by the characteristic "whoop"; the paroxysm frequently terminates in vomiting. Children seem to know when an attack is coming on, because they give a little fretful cry which you will learn to recognise. When you hear this, take a piece of old linen or lint and a bowl in readiness to receive any coughed up or vomited matter (a pile of pieces of linen or lint should always be in readiness in the isolation ward, and should be immediately burnt after use). Everything used for children suffering from whooping cough must be kept strictly separate and disinfected. The nurse must disinfect her hands thoroughly after attending to the child. Every article of clothing soiled with vomitus or expectoration must be changed immediately and placed in disinfectant. A special chart must be kept recording the number of attacks of coughing in twenty-four hours, whether with or without whoops, the number of times the child vomits and if this occurs with the cough. The feeding must be done most carefully, only a very little given at a time and an interval between each spoonful. These children lose weight rapidly owing to the loss of food by vomiting. To avoid this as far as possible, wait until the child has settled down after a paroxysm, then give a light feed very carefully; this will probably have left the stomach before the next fit of coughing comes on. Mouth cleaning must be done *before* feeding where vomiting is likely to occur. An alarming condition known as "black fits" may arise in young infants. During an attack of coughing they are unable to get their breath and go black in the face. Send for the doctor; lower the cot side, draw the head over the side, pull the tongue forward with the tongue forceps which should always be in readiness in hospital, and perform artificial respiration. If you are single-handed in a private house, pull the tongue out with a handkerchief, turn the child on its side on your lap and knead the side of the chest which is uppermost; this will probably start the breathing again. A mustard bath may be ordered.

LECTURE X.

Cardiac Cases—Rest, Posture, The Pulse, The Bowels, The Diet—Rheumatism—Kidney Diseases—Hot-Air Bath—Securing a Specimen of Urine.

CARDIAC CASES.

The nursing of acute cardiac cases differs very little from that of respiratory diseases. The chief nursing points are *rest*—mental and physical—attention to posture, careful observation of the pulse, regulation of the diet, avoidance of constipation.

Rest.

In the early stages the child must be kept lying down absolutely at rest. He must not be allowed to exert himself in any way; feeding, washing, everything must be done for him. In the case of children who are not old enough to understand the importance of lying still, they must be restrained either by braces or a jacket. Where the nurse cannot give her undivided attention, and some restraint is necessary as in these and certain operation cases, I have always found the following method efficient and quite sufficient:—Stitch pieces of bandage to the shoulder and side seams of the red flannel bed jacket and attach these *loosely* to the cot rails at the top and sides.* The jacket should be roomy, that is, a larger size than the child ordinarily wears. This method is preferable to the binder or brace arrangement which is apt to be adjusted more as pinions, and in heart cases might be positively injurious. Of course, you *never* apply restraint in *any* degree in a Poor-Law hospital without written instruction on the bed-card. Some form of restraint may be just as essential to the successful treatment of an operation or heart case as the appliances used in tubercular spines, etc., and the use of it must be prescribed by the doctor. What is needed in heart or rheumatism cases is sufficient restraint to prevent the child jumping up suddenly in bed and to limit movement to a safe degree. No risks must be taken where there is danger of heart failure, and unfortunately we are still far from Utopia as far as staffing in the children's ward is concerned. Children are most adaptable little creatures and do not seem to mind restraint once they have got used to it. It is important that these children should be kept as happy and contented as possible (mental rest). They should be provided with light and suitable toys and books, and placed in a cot commanding the ward so that they may find diversion in ward life. Extreme gentleness in moving for any purpose is necessary; the one aim of the nurse must be to prevent any muscular effort whatever.

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* *The bandage on the right side seam should fasten to a left cot rail and that on the left seam to a right cot rail.*

Posture.

In the later stages there are dyspnœa—owing to deficiency of oxygen in the blood—palpitation and œdema; at this stage the child must be propped up almost upright as this is the most comfortable position for him. In this position the abdominal contents do not press up against the diaphragm and the greatest possible amount of space is given to the heart and lungs. Oxygen may be ordered if the breathing is difficult. See that the taps of the cylinder are in working order before taking it to the bedside; sometimes the gas escapes with loud hissing and this would frighten the child. If there is much œdema of the legs, Southey's tubes may be used, or sometimes the doctor makes small incisions. Before this is done, the legs should be wrapped in boric lint after washing with plenty of soap and hot water. Apply plenty of sterile wool over the incisions and remember a dressing mackintosh under the legs so that the bed is not wet.

The Pulse.

The pulse must be most carefully watched in cardiac cases; any sudden quickening, irregularity, intermittency, etc., must be noted on the chart and reported to the doctor. These children are frequently on digitalis to slow the pulse, so the rate must be carefully noted and accurately recorded.

The Bowels.

The bowels must be made to move every day and must be kept free—the straining consequent on constipation is very bad indeed for the heart. Aperients are usually given in these cases as the diet and strict confinement to bed invariably induce constipation.

The Diet.

The diet should be light and must be given in small quantities only; a distended stomach interferes with the action of a normal heart and might prove fatal where the heart is enlarged or diseased. Milk should not be given in excess; jelly, broths, custard, minced meat and breadcrumbs, fish, fowl, and as much fruit as the child will take, are all valuable.

RHEUMATISM.

Rheumatism, in various manifestations, is a very common disease in childhood and is often accompanied or followed by heart disease in some form, so we will consider it here. The nursing, to a certain extent, is identical with that of cardiac cases. The child must be kept lying down and must not be allowed to exert himself in any way as there is the risk of syncope. Warmth is most essential as sweating is often profuse, so that these children must be clad in woollen gowns and nursed between blankets; the bed-gown should open from top to bottom to permit of examination of any part of the body with the minimum of movement. The child should be moved as little as possible because the slightest movement may cause acute pain; an older child may be lifted on a blanket "hammock fashion" to another cot whilst his own is airing; this should be done twice a day if sweating is very profuse. Tepid sponging may be ordered; this must be done very gently and the skin thoroughly dried, care being taken that the child does not become chilled. Rheumatism attacks children in different ways. It is important for you to remember that what mothers often speak of as "growing pains" is in reality rheumatism. Growing is *not* a painful process (except in dentition perhaps), and neglected "growing pains" may have serious results. School medical officers meet with pale, breathless children, suffering from enlarged heart with diseased valves and no history of rheumatism, but the mother will remember a sore throat perhaps, and "Oh, yes! he had growing pains." Now these cases are the ones which become chronic unless carefully nursed and supervised. Such children should be warmly clad, woollen garments next to the skin, thick stockings and well-soled boots, even in summer. No vigorous exercises must be allowed and all school games must be taboo; indeed, the child should give up all school work until the heart has recovered to a great extent. Pleurisy may occur as a complication. The limbs are not usually so much affected as in adults, but they may be red and swollen; if painful, they should be wrapped in cotton wool and loosely bandaged. If the pain is very severe in a joint, the limb should be put on a splint to prevent movement which increases the pain, as does also the pressure of the bedclothes. The diet at first is usually limited to milk and soda water; later, milk puddings, bread and milk, fish, chicken and white soups are given. Broths, red meats and sugar are eliminated from the diet because they cause acid fermentation. The great thing in the nursing of rheumatism in children is to remember that the treatment is *preventive* to a large extent, that is, by sparing the patient any sort of exertion or excitement, to ward off heart complications. The pulse must be carefully and intelligently watched and any sudden quickening of the rate or irregularity of the rhythm must be reported, as it may indicate heart involvement. It is necessary to keep in mind that the drugs commonly given in rheumatism—e.g., sodium salicylate, aspirin, etc.—are liable to produce deafness and noises in the ears, and if the patient becomes suddenly deaf, this must be reported to the doctor and the medicine omitted until his next visit. The nursing of chorea, a disease akin to rheumatism, will be considered in the lecture on nervous diseases.

KIDNEY DISEASES.

The nursing of renal diseases is directed towards lessening the work of the kidneys in every possible way, and this is done by making the skin act, and keeping the bowels loose. As sweating is desirable the child is nursed in blankets and clad in woollen garments. It is most important to avoid cold and chills so that the action of the skin may not be impeded. The diet consists chiefly of milk, milk pudding, Benger's, chicken, fish, etc., but no meat and extractives or eggs are allowed because of the albumen they contain.

Large quantities of barley water, lemon water and imperial drink may be ordered. In a typical acute nephritic case, the face has a puffy appearance, especially about the eyes. The œdema may be general, and when this is the case the urine is diminished. A urine chart must be kept; all the urine must be saved if possible, as it is most important to know the exact amount passed. The urine must be examined daily, the specimen being taken from the 24 hours' collection. The percentage of albumen must be estimated and entered on the chart. If the urine diminishes, hot air baths may be ordered to relieve the condition; the heat opens the pores of the skin so inducing free perspiration, and this gets rid of a certain amount of poison responsible for the condition. If unrelieved, the child develops uræmia and dies. The hot air baths are given with an electric apparatus or by means of a special lamp with a funnel.

HOT-AIR BATH.

Place a mackintosh sheet and blanket under the patient whose gown is removed, another blanket is laid loosely over him (this is removed later, so must not be tucked in). A special wicker cradle is placed over the patient and should reach from the foot of the bed to the nipples. In the frame-work at the foot is a round hole into which the funnel fits closely, that is if the lamp is being used; if the electrical apparatus is being used, this hole must be tightly blocked up. Hang a bath thermometer from the cradle over the chest by a piece of bandage in such a manner that you can withdraw it to see the temperature of the bath. Arrange a blanket lengthwise, then two blankets breadthwise, a mackintosh, and over all another blanket arranged lengthwise. They must all be well tucked in under the mattress so that there is no cranny left through which the hot air can escape. It is safest to fasten the ankles with bandages (over socks) to the sides of the cot, because the heat will make the child restless, and this will prevent the possibility of his being burnt. Slip out the covering blanket from the top of the bed, tuck it round the child's head and the others well in at the neck. Give hot drinks of milk or lemon water during the bath. When the temperature rises to 104F. lower the lights. The doctor's wishes with regard to the temperature and duration of the bath must be ascertained; the child is usually kept in the bath for 20 minutes from the time he begins to perspire. At the end of the time ordered, put out the lights, withdraw the cradle and mackintosh without uncovering the child, tuck the blankets round him and leave him to perspire for an hour. Have a fresh supply of clothing warming by the fire, ready to put on after the child has been quickly dried. If the electrical apparatus is used (which is simpler and safer) it is put in at the foot of the bed and the heat regulated by turning off one or more of the lights.

SECURING A SPECIMEN OF URINE.

There is sometimes difficulty in securing a specimen from a baby. For a boy, the penis is placed in the neck of a clean bottle (the old-fashioned feeding bottle is ideal for the purpose) and strapped in position, or a bandage may be tied round the neck of the bottle and *loosely* knotted round the waist. For a girl baby place a perfectly clean receiver under the buttocks, protect the edges with pads of wool and raise the baby's back on a pillow.

Children from six months to the second year are said to pass from 8 to 20 ounces daily and from the age of two to five years from 18 to 26 ounces.

LECTURE XI.

Diseases of the Nervous System—Convulsions—Epileptic Fits—Points to be Noted by the Nurse Regarding a "Fit"—General Treatment of Convulsions and Epileptic Fits—Meningitis—Spinal Puncture—Chorea (St. Vitus' Dance)—Nursing—Feeding—Pulse, Temperature, Etc.—Enuresis (Wetting the Bed)—Night Terrors.

CONVULSIONS.

The nervous system of a child is very unstable and easily upset. Probationers seem to find difficulty in understanding how convulsions occur. Convulsions are generally due to reflex causes; by this we mean that though the actual disturbance known as a convulsion proceeds from the brain, the *cause* of that disturbance is not in the brain itself. For example, convulsions may be due to dentition, constipation or emotion. Take dentition—the irritation, due to the cutting of the tooth through the gum, is conveyed by the sensory nerves proceeding from the gum to a hyper-sensitive brain, and causes an abnormal erratic discharge of nervous energy, evidenced by convulsive movements of the muscles. The same phenomena may result from any intestinal irritation, e.g., undigested food, or nervous irritation, as in highly excitable children. In many cases the convulsion is slight, and passes off in a minute; the child lies with eyes fixed and half-closed; there is twitching of the mouth and the hands may be clenched. A convulsion consists of two stages termed tonic and clonic; the tonic stage is one of *continuous* contraction, in which the muscles seem rigid, and this stage, which is sometimes so short that it is not recognised, is succeeded by the clonic stage, or condition of *intermittent* contractions. The face is at first pale but shortly becomes congested; the chest muscles in common with the rest of the muscular system, are involved in the spasm and respiration is thus interfered with. In the clonic stage the rigidity passes and is followed by contortions of the face, squinting, perhaps frothing at the mouth and violent jerking of the limbs. In certain cases the child finally falls into a deep sleep.

EPILEPTIC FITS.

Epileptic fits, the cause of which is unknown, are similar to the above, but may be preceded by a cry, and accompanied by the involuntary passage of urine and fæces, owing to relaxation of the sphincters.

POINTS TO BE NOTED BY THE NURSE REGARDING A "FIT."

The nurse is expected to report on several points in connection with "fits," and it is best to write these down at the first opportunity, whilst the event is fresh in the mind. You should note (1) whether the fit begins with or without a cry; (2) whether the convulsion is a general one, or whether only one part of the body twitches;

(3) whether there is incontinence of urine and fæces; (4) how long the seizure lasts. If there is a succession of fits as sometimes happens in young babies or children subject to epilepsy, the number, type and exact time at which these occur, should be carefully recorded. In the case of epileptics, a useful record and guide as to treatment, amount of study and exercise desirable, is a "fit chart." This is a chart showing the number of seizures during a week, the hour of their occurrence and severity.

General Treatment of Convulsions and Epileptic Fits.

The main thing in the treatment of convulsions is to lessen the cerebral congestion, and, if possible, to remove the cause. Cold is invariably applied to the head, either in the form of cold cloths or ice-bags, and it is important that this treatment should be continued for at least an hour after the convulsion is over. An enema should be given, and a dose of castor oil or calomel may be ordered to clear the bowel of any irritant. In the case of delirious or excitable children, I have found that a hot pack in which the child may remain comfortably an hour or more, is more efficacious and less fatiguing than a hot bath. If you are giving the bath, put the babe in without waiting to undress it if the convulsion is severe. The nurse, of course, sends for the doctor at the beginning of the convulsion. Occasionally, convulsions may usher in an acute illness, when the temperature will be raised and the pulse full and rapid, so that it is always advisable to take the temperature and pulse as soon as practicable. The treatment of epilepsy as far as nursing is concerned consists in placing the patient in such a position that he cannot injure himself, usually on the floor clear of objects which he might knock against. All restricting clothing must be loosened, and a gag, e.g., a cork or piece of wood, must be placed between the teeth to prevent the child biting the tongue. After the fit, the child should be put to bed and allowed to have his sleep out. These children should sleep in *low* beds; their diet, daily habits, and life in general require careful regulation and supervision.

MENINGITIS.

Meningitis, or inflammation of the membranes covering the brain, is a very distressing condition and is most certainly fatal when due to the tubercle bacillus. At the outset, I may say that the condition is hopeless, and the nursing can only be directed towards making the child as comfortable as possible. There is probably nothing more trying and sad in private practice than the nursing of a little child suffering from tuberculous meningitis—parents find it impossible to realise that their little one is dying as they watch the various stages, and they certainly require sympathetic consideration as much as the patient. The sick room must be kept cool and dark and absolutely quiet in the stage of irritation. In hospital, in this stage, these children must be nursed in a side ward if possible. Ice-caps are applied to the head during this stage, and blistering behind the ear may be ordered. The scalp, of course, is shaved. Cold to the head must be discontinued if the pulse becomes slow or the patient is unconscious. Constipation is very troublesome and must be relieved by an enema every morning. In the last stage when the patient becomes unconscious, the bladder may become distended and the catheter will have to be passed. Towards the end there is generally incontinence of the bladder and bowel, and great care is necessary to prevent bedsores. Feeding is a difficult problem towards the termination of the case and is only persisted in out of consideration for the friends. The temperature is not usually high except towards the end, when there may be a considerable rise. The pulse is slow and irregular in the initial and intermediate stage, but in the final stage becomes rapid, owing to progressive weakening of the heart. You must remember that these patients must be looked upon as infective, and all utensils, etc., used for them must be disinfected.

SPINAL PUNCTURE.

The doctor may decide to puncture the spinal canal to relieve pressure or for diagnostic purposes. The following should be in readiness. The necessary things for sterilising the surgeon's hands and the site of puncture, a sterile aspirating needle about four inches long, a sterile test-tube which should be kept in the water in which it is boiled, collodion, a sterile gauze scab for sealing the puncture, and the local anæsthetic of the doctor's choice. *En passant*, if you should be preparing for lumbar puncture for purely diagnostic purposes, some surgeons require two test tubes sterilised, because it is necessary for them to distinguish between the fluid which flows first and that coming after. When the surgeon is ready, turn the patient on his side, the head and shoulders bent forward in order to round the spine. The needle is inserted, the tube held under to receive the fluid, and when sufficient is drawn the puncture is sealed. Sterile wool is used to "cork" the test tube.

CHOREA (ST. VITUS' DANCE).

This disease is said to be often simply a manifestation of rheumatism, certainly children who have chorea have a special tendency to rheumatism. Before speaking of the actual nursing of chorea, I want to draw your attention to the significance of certain early symptoms of the disease. The children attacked are usually sensitive, intelligent and excitable. Predisposing causes of chorea are the fret caused by being forced to do uncongenial tasks, daily contact with people who irritate or make the child unhappy, e.g., a school-fellow who is always teasing or making fun of her, or a nurse or teacher who dislikes the child and is ignorant and unkind enough to take every opportunity of letting her know it. Fright, inability to master games, overstrain with school work, or even a severe scolding are all enough to determine an attack. It is not uncommon for a mother, when bringing such a child to hospital, to say, "She was always so sharp and her father was so anxious for her to get on at school, and never let her miss her home lessons"—probably therein lies the explanation of the chorea. In other cases the mother notices the child restless and awkward or perhaps continually dropping things, for which she scolds her, which is the worst treatment possible. Next, the habit of shrugging the shoulders and "making faces" is noticed. If at this stage the child is taken to a doctor, allowed to live in the open air as much as possible, kept quiet and free from excitement and the diet regulated, chorea may be averted. All studies must be discontinued; the food chosen must be rich in salts and the diet should be light. By the time the child comes into hospital, the disease is well-established, the patient may be anæmic and irritable, the limbs are thrown about in an erratic manner, the body wriggles, the hands are twisted aimlessly and there are constant grimaces; the tongue, when feeding is attempted, is protruded, then jerked back in a rapid spasmodic fashion.

NURSING.

The nursing of these cases affords ample experience for the interested and intelligent nurse. Immediately on admission place the child in a side ward, or screen off the cot in the general ward. The other children must *not* be allowed to see the patient; children are imitative little animals, and, further, the consciousness that others are watching her increases the child's movements. The cot must be padded all round with pillows to prevent the child hurting herself against the rails during the movements. Gentle massage of the limbs is sometimes ordered, but no attempt to restrain the movements must be made, it will not have the slightest effect except, perhaps, to increase them. The more you notice the child, the more exaggerated the movements become.

FEEDING.

This is undoubtedly the most difficult part of the nursing; if the child does not get sufficient nourishment, wasting is rapid and death may occur from inanition, so that food must be given somehow. It is a good plan to tell a story to a young child or hold a conversation (in which you do the talking!) with older children whilst feeding. The great thing is to take the condition quite as a matter of course, showing not the slightest surprise or annoyance if the spoon is knocked out of your hand, for instance. Put very little food in the spoon, watch your opportunity, and slip it to the back of the mouth; if much food is put in the mouth, the child begins to cough and splutter, and half the food is lost. Fluids (broth, milk, etc.) are sometimes taken quite well from a feeder with a spout to which a piece of rubber tubing is attached; direct this to the back of the mouth. In very severe cases it may be necessary to restrain the child; if there is choking nasal or rectal feeding will be necessary. The following method may prove successful in difficult cases. Wrap the child up firmly in a blanket and sheet, arms to sides, diverting her attention as far as possible by chatting to her the while. Place a folded long towel round the forehead, cross the ends at the back of the head. An assistant stands behind the child's head, and holds the ends of the towel firmly (one in each hand) keeping the head on the bed. In this position the fluid can be given with the feeder described above, or nasal feeds may be given (by the doctor's order only). Restraint with the towel does not seem to excite the child so much as the hands.

PULSE, TEMPERATURE, ETC.

A chart must be kept recording the pulse, temperature, and action of the bladder and bowel. Any sudden rise of temperature or quickening and irregularity of the pulse are significant, as heart mischief is one of the serious complications. The condition of the bowel and bladder must be carefully watched. Chorea is commonly treated with arsenic and a not unusual order is that the medicine is to be given four-hourly until vomiting occurs. Now children tolerate arsenic well, but a grave responsibility rests with the nurse in these cases. The maximum dose of Fowler's solution (arsenic) is eight minims, according to the B.P., and when I tell you that ten minims, and in some cases as much as twenty minims are given, you will understand the necessity for watching these children closely for symptoms of arsenic poisoning. These are vomiting, diarrhœa, abdominal pains, suffused eyes. Arsenic mixtures must *never* be given on an empty stomach, but always after food, and they must be given punctually. The medicine must be discontinued immediately the child shows signs of retching or vomiting.

ENURESIS (WETTING THE BED).

Bed-wetting occurs in children of both sexes and when it occurs in the night during sleep, is *not* to be treated as a fault deserving punishment. It may be due to worms, constipation, general debility, phimosis (tight foreskin) in boys, or may be simply a continuance of the normal infant state. I want to emphasise the point that no *trained* nurse ever speaks of a child who wets the bed during sleep as "naughty." The condition must be treated just the same as any other physical defect over which the child has no control. A little girl of eight once came under my care with a history of "being a dirty girl, always wetting the bed." I shall never forget the pitiful pleading look or the cry of terror when I took her out of bed in the evening. "Oh, I thought you was going to hit us," was her remark, which told its own story. No further explanation was needed. That little child, who was in an overwrought condition, sobbed from sheer relief that she was not to be punished. A few days later a large stone was removed from the bladder by supra-pubic operation. What the little one had suffered with the cystitis which accompanied the condition may be better imagined than described. Any possible cause must be rectified and the diet must receive special attention. Such children are best kept on a diet of milk, milk puddings, and fish, with an occasional egg and fruit. No fluid should be given after five p.m. and the child should be put to bed at seven p.m., when he must be made to empty the bladder. He must be wakened at 9.30 p.m. for the same purpose, and again at two a.m. It is a good plan to alter the hours, say, to nine, twelve, and three a.m. These children must sleep on a firm mattress protected with drawsheet and mackintosh. Cold douching of the spine and cold sponging are beneficial and should be done before the child goes to bed. In obstinate cases, absolute rest in bed with strong tonics is the best treatment. I have heard of string being tied round the penis in little boys to prevent bed-wetting, but have never known of such a dreadful thing in hospital. I mention it that you may warn nursemaids or others who might be tempted to do this.

NIGHT TERRORS.

You may sometimes be startled in the children's ward on night duty by a little child jumping up in bed, staring wildly round him and screaming; he does not know where he is and cannot recognise you. Night terrors occur most commonly in excitable children or those suffering from dentition, chorea or rheumatism. If possible, lift the child from his cot and give him a drink, this will often cut short an attack because it is something tangible; nestle him close in your arms and talk "mother talk" to him; the sound of your voice will reassure him, and he will feel secure if you nurse him. If it is not possible to pick him up, stay with him and let him feel your hand until the attack is over and he has gone to sleep again. Have you ever considered the fear of a little child? We grown-ups know how we dread fear, and we know *what* we fear—illness, accident or firearms; these fears are explainable and we understand them. But what does it feel like at three or four years old to be frightened by dreams and awaken in a dark room? Chairs, wardrobes, table, all become invested with sinister design on that palpitating small person in a cot. We *know* that most children are afraid of the dark and until they grow out of it, let us keep it from them. Night-lights should certainly be used when children are nervous (in a private house). It is a subtle form of cruelty to keep a sensitive child in the dark with the object of making him brave. Children subject to night terrors should not be allowed to become over-excited and a sponge down before going to bed has a soothing effect. Constipation especially must be guarded against and the diet carefully regulated.

LECTURE XII.

Skin Disease — Ringworm (Treatment) — Eczema — Starch and Boracic Poultice—Restraint—Cracks Behind the Ears—Bland Fluids—Lotions used for Eczema—Powders used in Eczema—Alterations in the Treatment of Eczema—Impetigo Contagiosa.

RINGWORM.

There are several varieties of ringworm, those with which you are most familiar in the wards being ringworm of the scalp (tinea capitis), and ringworm of the body (tinea corporis). Ringworm is very contagious and that of the scalp is most intractable to treatment; this means the loss of much valuable school time at a critical period of the child's school life. Ringworm on the scalp begins as a red, scaly patch which becomes circular, the hair comes out, and the patch is bald except for a few "stubbly" crooked hairs which stick up here and there. Ringworm is due to fungus and as long as the short hairs can be pulled out easily, and grow irregularly, that is, not in the natural "lie" of the hair, the fungus is active.

TREATMENT.

The head must be shaved for a good area beyond the ringworm and the most satisfactory plan is to shave the entire scalp. This may seem drastic, but it is really the best in the long run, because then any small patches which might easily be overlooked are disclosed. They are seen as scaly, dry spots raised above the shiny, smooth scalp; if radically treated at this early stage they are sooner cured. The spots are sometimes touched with pure carbolic acid (if the child is over seven, and there are not too many of them), and rubbed with parasitic ointment for ten minutes daily afterwards. The treatment is directed towards (1) scrupulous cleanliness of the scalp, (2) preservation of healthy skin round the ringworm (the skin should be free from eczema which would be favourable soil for the fungus), (3) destruction of the fungus, either by means of chemical applications, e.g., ointments, acids, etc., or by exposure to X-rays. The treatment of ringworm is an important duty, which in the children's ward ought to be carried out under the immediate supervision of the Sister or staff nurse and should not be left to junior probationers. Certain treatment if applied unintelligently may aggravate the condition which it was intended to cure, unless the effects are watched carefully Young nurses do not understand the potency of the drugs used, and are not experienced enough to know the evil significance of blistering and eczema around the ringworm, which may occur as the result of careless application of certain drugs. The whole scalp must be washed daily with the soap ordered by the doctor (one of the best is superfatted potash soap) and plenty of hot water and swabs of tow. Do *not* use the tow which has been in contact with the ringworm for the rest of the scalp. Dry the scalp carefully with wool or old linen which can be burned, observing the same precautions in its use as with the tow. If painting with formaline, iodine, glacial acetic acid, etc., make a ring of vaseline round the ringworm first, and paint sparingly inside, blow until dry, then paint again twice or the number of applications ordered at one sitting. The treatment *must* be suspended at the first sign of blistering unless the doctor orders painting until blistering occurs. Do not forget that such treatment makes the scalp smart, so comfort the child and tell him it will soon pass off. If ointment, e.g., ung. hydrarg, nitr. dil., is ordered, it must be rubbed in for ten minutes *by the clock,* and only into the ringworm, not the surrounding skin. This is not nearly so simple to do as it sounds, but when you remember that the fungus lies deep in the scalp at the root of the hair, you will understand that the *continuous* rubbing with the ointment is necessary, if the germicide is to reach it. All "stubbly" hairs must be pulled out with epilation forceps, the hairs are very brittle, hence the "nibbled" appearance. A cap of old linen must be worn and a convenient method of disinfecting this is to iron it morning and evening, *scorching* it a little every time. On the district the mothers may object to the scalp being shaved, and in that case you must explain the necessity for shaving around the ringworm, also the highly contagious nature of the disease. Usually, the mothers are so anxious to get the children back to school that they are prepared to adopt any helpful suggestion. These children ought to go bareheaded, it is safer, but sentiment may be against this, so a detachable lining of old linen or oiled paper, coming well down to the edges of the cap should be worn. The paper can be burned or the linen cap either scorched, baked or boiled daily. Pillow-cases and towels may be a source of re-infection and must be changed *daily.* They must be disinfected before going to the laundry.

Ringworm of the body is much more amenable to treatment and usually disappears after the application of tinct. iodi. or ung. hydrarg. nitr. dil. The clothing must be disinfected.

ECZEMA.

Eczema in one or other of its varied forms is the commonest disease seen in the children's ward, except, perhaps, impetigo contagiosa, and its progress is certainly, as a general rule, the most disheartening to nurses (and mothers). Nurses who have had much to do with skin dressings know the vagaries of eczema and take philosophically the discovery of an angry weeping surface which at the previous dressing showed marked evidence of healing. To those nurses who have not yet had much experience in diseases of the skin I may say that as long as you do these dressings conscientiously, and gently, feed the child regularly on the diet ordered, and give the prescribed medicines punctually, you must accept the fluctuations of eczema with equanimity, if you would save yourselves worry. But remember in private practice that the mothers have not your experience, and will need a good deal of encouragement to take an optimistic view of this tiresome complaint. It comforts them to know that even in hospital, these babies "break out" again when they are nearly healed, but are finally cured with perseverance. Sometimes a new tooth is ushered in by a recurrent "weeping" of the eczema, and I knew one little child whose eczema was for some time "angry" after visiting day. As the child's mother gave her no forbidden food, we came to the conclusion that the recurrent inflammation was the result of emotion, viz., fretting for the mother. Eczema may be acute or chronic, and the treatment differs with the stage. In the acute stage, soothing treatment, i.e., sedative lotions or other applications externally, and sedative drugs internally, are prescribed. In the chronic stage, stimulating applications with tonics are given. In both stages, careful dieting is of importance and the nurse must see that feeding is carried out regularly and strictly in accordance with the doctor's instructions. The dressings form a most important part of the nurse's duty. There are so many different treatments that I can but touch on the main points in connection with the general nursing of skin diseases. (1) When the skin is diseased, it needs *rest* just as much as any other part of the body, that is why we keep a patient suffering from extensive eczema in bed, though they seem fairly well in general health, also why we try to prevent them rubbing the parts whilst there is irritation. (2) Drugs cannot reach the diseased surface through a layer of scales and crusts, so these *must* be removed. (3) Soiled dressings must be removed most carefully, because if force is used (apart from hurting the child) the new cells will come away with the dressing. (4) Soap and water must *never* be used on eczematous surfaces except by a doctor's orders.

The starch and boracic poultice is the commonest preliminary treatment because it not only softens the crusts and cleans up the surface when necessary, but it soothes the inflamed skin. It must be applied frequently enough and is useless if allowed to dry and harden. Vaseline or oil should be applied round the edge of the poultice to prevent it adhering to the skin.

STARCH AND BORACIC POULTICE.

Take a heaped tablespoonful of starch powder and a teaspoonful of boracic powder; mix to a paste with cold water, add *boiling* water until it stiffens (a little less than a pint) and stir all the time. Set aside to cool. Spread on old linen or lint, cover the starch with gauze and apply to the affected parts; bandage in position; wherever possible, e.g., on the head or for the flexors, use the triangular bandage; it is more easily adjusted; on the trunk, secure with a towel or binder. As these dressings require constant changing, much time is saved as well as expense by the use of the triangular bandage instead of gauze bandages. When the crusts are removed, ointment or gelatine dressings are applied. The ointment should be spread *thickly* on lint (some doctors order the lint to be damp) and should be applied in strips. Any preliminary cleansing of the skin must be done with olive oil and the parts made as dry as possible before the ointment is applied. If Unna's zinc gelatine is used as a dressing, the parts are first covered with gauze. The tin containing the gelatine is placed in a bowl of hot water until the gelatine liquifies. The preparation is then painted over the gauze with a brush and allowed to solidify. A piece of lint covers this, secured by a bandage.

Restraint.

During the irritable stage, some form of restraint is necessary. A baby may be slipped into a pillow case, a row of safety pins forming a groove between the arms and the trunk; an older child should wear cardboard cuffs or splints, protected with wool, reaching beyond the elbow and below the finger-tips. If there is eczema on the trunk, the sleeves of the gown may be pulled over the hands, tied below with a bandage which can be secured loosely to the cot rails. The movement of the arms should be limited just enough to prevent the child rubbing the irritating parts and no more.

Cracks Behind the Ears.

Eczematous intertrigo behind the ears in children is frequently the commencement of a persistent scalp eczema, and that is why we insist on careful washing and drying of these parts. It is often the result of soap left behind the ears, another reason why soap, especially hospital soap, should not be used for children's faces. When a crack behind the ear occurs, the skin surfaces *must* be kept apart, either by a tiny gauze bag of powder or a ring or strip of lint, spread with ointment. These must be applied after bathing the parts with starch or oatmeal water.

Bland Fluids.

In local treatment, washing with soap and water *must* be avoided; when cleansing is necessary, bland fluids, such as starch, bran or oatmeal water may be used for the purpose. To make oatmeal or bran water tie four ounces of oatmeal or six ounces of bran in double muslin, and boil in two quarts of water for 15 minutes; allow the bag of meal to remain in the water until cold, when it is ready for use. Starch water is made in the same way as for the poultice, but more water is added, until the fluid is of the consistency of oil. These washes must be made fresh daily as they turn sour; if there is only one dressing to do, a much less quantity is sufficient. In cleansing a raw surface, remember that a dabbing movement is less likely to disturb new cells than rubbing, which must never be employed. If ointment dressings stick in eczema, moisten the edges with oil instead of water for lotion, where the use of water is forbidden.

Lotions used for Eczema.

In the acute stage, boric and calamine lotion which is soothing, or in the chronic stage, tar and lead lotion which is stimulating, is often used. Shake the bottle, pour a little into a bowl, soak pieces of double-ply gauze in it, and apply fairly wet. If a poultice action is required the gauze is covered with gutta percha tissue, but in the acute stage this may be omitted, as the dressing becomes hot and aggravates irritation. In these cases, the dressing may be kept moist without changing by soaking a swab in the lotion and dabbing it over the gauze dressing when necessary.

POWDERS USED IN ECZEMA.

These are used extensively for babies. A common mistake is that too much is used, the superfluous powder cakes on the skin and irritates it. A good powder for drying excoriated surfaces is made of one ounce of powdered talc, one ounce of starch powder, and two ounces of zinci oxide. An excellent one for babies prone to eczema is composed of calamine powder two drachms, and powdered starch six drachms. The powder may be tied in a double gauze bag, and if this is tapped with the fingers over the skin surface just about the right quantity escapes.

ALTERATIONS IN THE TREATMENT OF ECZEMA.

The nurse must carefully watch for and report any change in the skin condition which may follow altered treatment. No one can predict the result of *any* treatment in eczema; what soothes in one case may irritate in another, and what may have been most successful in a run of cases may renew an attack in another. The main points are to soothe in the weeping acute stage and to stimulate in the chronic stage. If you find that an ointment increases the inflammation, apply a starch and boracic dressing until the doctor's next visit. Where the eczema occurs extensively on the body, remember to keep the child *lightly* covered; heavy bed clothes will aggravate the irritation. The most generally useful remedy in ordinary eczema cases is a weak white precipitate ointment.

IMPETIGO CONTAGIOSA.

This is a highly contagious skin disease due to pyogenic (pus-forming) organisms; it spreads rapidly through the ward unless every precaution is taken. The disease develops quickly and is pustular almost from the beginning. The pustules are honey-coloured and look as if gummed on the part; several may coalesce so that they are seen as irregular, greenish-brown, raised patches, matting the hair together if on the scalp. The child inoculates other parts of the body by scratching, and the nurse may infect herself or others if surgical cleanliness is not observed. If on the head, the hair must be cut round the affected parts, and the crusts must be removed by an oil compress or starch poultice. It is useless to apply ointment *over* the scabs. I find that strips of gauze soaked in olive oil and arranged nest-fashion, round and over the crusts, are better for the purpose than lint—the gauze being more adaptable, clings round the scab which separates sooner than when lint, which comes into close contact with the top only, is used. In the case of the face, a crocheted net mask,* as used by Dr. Stopford Taylor at the Liverpool Skin Hospital, is necessary to keep the dressings in close contact with the pustules, or a lint mask with apertures for the nostrils, eyes and mouth, secured with tapes round the head and neck may be used. Ung. hydrarg. ammon. (white precipitate ointment) is the application usually ordered; it is antiseptic and so kills the germs. A common error in the application of strong, antiseptic ointments, especially in the case of the face mask, is to apply them beyond the lesion (the word "lesion" means injury or morbid change in the skin). Now you would not give drugs to a healthy person, so why apply an ointment sufficiently strong to kill germs to healthy tissue? Ung. hydrarg. ammon. irritates healthy skin and may cause eczema which will immediately become infected, and the patch of impetigo considerably enlarged. Some nurses dress round the pustules with starch and boric powder or vaseline, and this, after the cleansing with carbolic lotion 1.40 is usually sufficient to prevent inoculation of the sound tissue by the discharge. The ointment dressing must be cut to exactly fit the part, no matter how small; the dressings are covered with the dry lint mask (which may be dusted with powder), or a thin layer of wool and the net. The great thing is to keep the air excluded; air causes scabs to form. Impetigo is not irritable, but if the child scratches the scab, he will certainly inoculate himself elsewhere. The nails must be cut very short and if necessary cardboard cuffs must be worn. A cap must *not* be worn because it will be infected. These cases should *not* have face flannels or hand-gloves. They must be carefully washed and dried with wool swabs by the nurse; though this sounds extravagant, it is cheapest in the end. It is well worth while taking pains with impetigo, because attention to details in the dressings, disinfection of hands and dressings, etc., all have their reward, inasmuch as the child is healed sooner, and others do not contract the disease. In hospital, all skin diseases must be treated as if they were infectious, because among such a variety, non-infectious skin diseases, e.g., eczema, may so soon be infected. A word of warning is necessary when using mercurial ointments over an extensive area. Symptoms of mercurial poisoning may arise in children; they are: increased salivation, tender gums, foul breath and later, colic and diarrhœa.

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* *See page* 58.

LECTURE XIII.

Scabies (Itch)—Pediculosis (Lice)—Pediculus Corporis—Pediculus Capitis—Urticaria (Nettle-rash)—Inunction—Medicated Baths Used in Skin Diseases (Alkaline Bath, Bran or Oatmeal Bath, Cyllin Bath, Mustard (Stimulating) Bath, Starch Bath, Saline Bath (Tonic), Saline Bath (Normal Saline), Sulphur Bath)—**To Make a Crocheted Net Face Mask—Common Terms Used in Skin Affections.**

SCABIES (ITCH).

This is a common skin affection among the children brought into our hospitals. It is highly contagious and is due to a parasite (acarus scabiei) which burrows under the skin and lays her eggs. It is characterised by intolerable itching, especially at night when the parts are warm. The commonest sites of infection are between the fingers, on the inner wrists, elbows, on the feet, round the buttocks and about the genitals. The "burrows" can be recognised as a fine black line. The treatment consists of prolonged hot baths to soften the skin, after which sulphur ointment, half strength, is well rubbed into the affected parts. (Equal parts of sulphur ointment, B.P.

strength, and lard are quite strong enough for children.) The bath should be given at a temperature of about 104 degrees (the doctor will order the temperature). Children do not tolerate sulphur well, in some cases it gives rise to an eczematous rash, and when this happens the sulphur ointment must be discontinued. A routine treatment for scabies is as follows:—The child soaks in the bath for twenty minutes, hot water being added cautiously to maintain the temperature. Cyllin, one ounce to four gallons of water, may be added. The affected parts are well rubbed with soft soap. The child is dried and the ointment ordered is rubbed thoroughly into the skin with a piece of lint, before the fire. The bedgown is lightly dusted with a boric, sulphur and starch powder, also the sheets and pillowcase. These are all changed *daily* for three days, by which time the condition should be cured. It is useless to carry out treatment to the body and forget that the clothing, towel, etc., can re-infect the child if not changed. Storax or naphthol ointment is used where sulphur is too strong. If sulphur treatment is carried out unintelligently, a condition, more difficult than scabies to cure, may result.

PEDICULOSIS (LICE).

The two kinds of lice most commonly infecting children are the head louse (pediculus capitis) and the body louse (pediculus corporis).

PEDICULUS CORPORIS.

The body louse *lives* in the clothing and feeds on the body. The lice are not found on the body, but on the clothing, especially in the seams and creases about the neck and shoulders. Body lice may be suspected by the presence of scratch marks, especially about the chest and shoulders, and the tiny red "punctures" or bite of the insect. Treatment consists of hot antiseptic baths with plenty of soap. All clothing and infected bed-linen must be stoved.

PEDICULUS CAPITIS.

Most children admitted into our hospitals are infected with head lice in a greater or less degree. The lice are easily disposed of, but their eggs or "nits" are most tiresome to eradicate. "Nits" are tiny white eggs attached to the hairs, and they may be present in large numbers, especially in the hair at the nape of the neck and behind the ears. Most Sisters have their favourite treatment, and, as far as I know, every treatment is a specific. But I have never yet found any treatment which will dissolve or remove the "nits" *quickly*. These are so objectionable, besides being the sign that the head is, or has been, dirty, that it is worth while to take pains to get rid of them. To save future trouble the treatment should be radical from the first; once the head is free from vermin, ordinary care will keep it clean. An efficient method of cleansing the head is as follows:—Soak the hair in a mixture of equal parts of carbolic 1-20, vinegar and methylated spirits; wrap the head in a towel and leave for some hours. Next, small-comb it thoroughly; this will remove the dead lice. Finally, carefully wash the head with soft soap and hot water to which Cyllin has been added, in the proportion of one drachm to a quart; well rinse the hair with hot water. No self-respecting louse will survive this treatment! *Hot* vinegar or a lotion composed of one part of glacial acetic acid to eight parts of water is excellent for dissolving the "nits" if used regularly, and paraffin certainly puts them out of action so that they do not hatch out; the danger of fire must always be remembered when paraffin is used. On the district if a little mild white precipitate ointment is used to the child's scalp, once a week, there is very little danger of a dirty head. The mother may be advised to buy a pennyworth of white precipitate powder and two ounces of lard (1d.), these well mixed together make an efficient and cheap ointment. *Note*—neither this, nor any other parasitic application, e.g., Rankin's ointment, must be used to the scalp if the skin is broken. Sometimes children are admitted to hospital with the hair matted together and the scalp one mass of scabs, the result of scratching. The doctor will probably order the hair to be cut off and the head shaved. After the hair is cut as closely as possible, a starch poultice or boric compress is applied to soften the scabs. After the crusts are removed, the head is shaved and the ointment or other dressing ordered by the doctor is applied. Now nurses are so trained to the necessity for cleanliness that occasionally their ardour runs away with their discretion. A child who is *ill* must not be subjected to the somewhat drastic "cleaning up" which is employed for those children who are often admitted for that treatment only. The hospital rule, "heads to be clean within 36 hours after admission," must be in abeyance in the case of a child suffering from pneumonia, for example. No very sick child (or adult) can bear vigorous or continuous manipulation of the head. The child will not die from the dirty head, but she might from exhaustion due to the too energetic cleansing of it. In these cases the head must be cleaned gradually. Comb the hair gently, a little at a time, with the suggested mixture, wrap it up in a soft, old towel for 24 hours, making the child as comfortable as possible. Any lice will be dead when the towel is removed. *No* jaconet must be applied over carbolic applications.

URTICARIA (NETTLE-RASH).

In children this disease is characterised by a widespread, raised or papular, vivid red rash. The appearance of the rash is exactly like that produced by a nettle-sting; the eruption consists of raised, hard, flattened swellings, varying in size, white in the centre, and associated with intolerable burning and itching. Urticaria is usually due to dietetic errors or constipation, or it may happen that the child has an idiosyncrasy to certain foods, e.g., strawberries, fish or eggs. It usually comes on suddenly and may disappear as suddenly. The treatment consists of alkaline mixtures internally, and sponging with an alkaline lotion—bi-carbonate of soda, one drachm to a pint of tepid water—will relieve the burning and itching. A good soothing lotion which is always available in a private house consists of equal parts of vinegar and water. In hospital, a sponge down with 1.80 carbolic quickly allays the itching. Urticaria usually responds quickly to treatment, but in some cases it may become chronic. The clothing must be light and non-irritating.

INUNCTION.

Before leaving the subject of the application of ointments, etc., mention may be made of inunction. Drugs are absorbed by the skin, and inunction is a popular method of introducing mercury into the system. Cod-liver oil or olive oil is also used as an inunction in the case of marasmic or delicate children. Inunction is best done after a hot bath when the pores are open. If oil is ordered, wash the abdomen with hot water, warm the oil and rub in with a circular movement; a flannel binder is next applied and over this a piece of jaconet may be stitched. Blue ointment (mercury) must never be applied to the same spot on consecutive days, or the skin will be irritated. For syphilitic infants, a piece of the ointment, about the size of a hazel nut, may be placed inside the binder (do not allow it to come immediately over the umbilicus). A proper system of inunction should be adopted, in rotation, on consecutive days as follows:—Right axilla, left axilla, right inner elbow flexure, left inner elbow flexure, inner surface of right thigh, inner surface of left thigh—six days shalt thou rub and on the seventh do no labour! After the lapse of the day, begin the cycle again in the same order. About half a small teaspoonful is used at a time. Remember that the nurse's hand can absorb the drug (also the germ of the disease), so an old rubber glove should be worn when rubbing with mercurial ointment, or it may be rubbed in with the smooth glass stopper of a wide-necked bottle.

MEDICATED BATHS USED IN SKIN DISEASES.

A domestic bucket holds roughly two gallons of water; six bucketfuls or twelve gallons are ample for a small child's bath, and the following proportions are about correct:—

ALKALINE BATH.—Add two ounces of bi-carbonate of soda to twelve gallons of water at a temperature of 100F. It is a good plan to test the alkalinity of the bath, and this may be done by means of red litmus paper which turns blue. Where you are unable to measure quantities exactly, e.g., in private practice, if the water feels *slightly* slippery it is sufficiently alkaline.

BRAN OR OATMEAL BATH.—Tie one pound of either meal in a loose bag of thin muslin, place in a gallon jug and fill with boiling water. Stand in a warm place for half-an-hour or longer to extract all the emollient property; press the moisture from the bag of meal and add the fluid to the bath (eleven gallons of water).

CYLLIN BATH.—Add three ounces of Cyllin to the bath.

MUSTARD (STIMULATING) BATH.—Tie three ounces of mustard in a *double* muslin bag and place in a basin of cold water; squeeze the bag well and add the fluid to the bath. This bath should be given at a temperature of 102 deg. F.

STARCH BATH.—Mix to a paste with cold water, half-a-pound of starch, add boiling water until it is quite thin, (it will thicken first) then add to the bath.

SALINE BATH (TONIC).—Dissolve three-quarters of a pound of sea salt in boiling water, and add to the bath. This should be given at a temperature of 85 deg. F. unless there are orders to the contrary.

SALINE BATH (NORMAL SALINE).—Normal saline baths are sometimes ordered for the treatment of wounds, e.g., burns. Add three-quarters of a pound of common salt to twelve gallons of water.

SULPHUR BATH.—Dissolve one ounce of potassa sulphurata in hot water and add to twelve gallons of water (sulphur will discolour a metal bath). Sulphur baths are rarely ordered for children. The temperature of the bath and the length of time the patient is to remain in it should be ascertained from the doctor. The bath must be carefully cleansed and disinfected after use.

TO MAKE A CROCHETED NET FACE MASK.

I give here directions for making the face mask mentioned in the last lecture,* similar to those in use at the Liverpool Skin Hospital, a pattern of which was kindly lent me by the matron. Coarse knitting cotton of the kind used for making dishcloths is used. The mask is easily sterilised by boiling and may be used many times. It is made in a few minutes. 1st row: Commence with 100 chain; 2nd row: 1 treble into 5th chain from hook, 3 ch., miss 3, do. 1 tre. into next ch., until 14 tre., are crocheted; 3rd row: turn with 6 ch., and 1 tre. into holes made by ch. in previous row, 2 ch., 1 tre. to end; 4th and 5th rows: same as 2nd row; 6th row: begin as usual, after 5th tre., do 12 ch. miss 3 holes (*this forms aperture for the mouth*) 1 tre., 3 ch to end; 7th row: same as 4th row, doing 1 tre., 3 ch. four times into 12 ch. in 5th row; 8th row: 1 tre., 3 ch., 6 times, 8 ch., miss 1 hole (*aperture for nose*) 1 tre., 3 ch., to end; 9th row: 1 tre., 3 ch., to end of row; 10th row: turn as usual with 6 ch., 1 tre., 3 ch., four times, miss 2 holes, 8 chain, 1 tre., *into* 7th tre. of previous row, 3 ch., 1 tre., *into* 8th treble, miss two holes, 8 ch., 1 tre., 3 ch. to end; 11th row: same as 2nd and 3rd rows, doing 1 tre., 3 ch., into each space (*openings for eyes*) made by 8 ch. in last row; 12th, 13th, and 14th rows: 1 tre., 3 ch., to end, finishing the last row with about 50 chain. This makes a tail to tie into hole on opposite side.

COMMON TERMS USED IN SKIN AFFECTIONS.

In order to be able to report lucidly on skin affections, it is necessary for you to know what the commoner terms designate. The word *lesion* means injury to, or morbid changes in the skin. *Erythema* is a simple redness due to hyperæmia (excess of blood). It disappears on pressure and returns when the pressure is removed. A *papule* is a pimple. A *vesicle* is a tiny blister or an elevation of the epidermis containing clear or turbid fluid. When several coalesce or run together, they are termed *blebs.* A *pustule* is a vesicle in which the fluid has become purulent (pus). A *tubercle* is a tiny, hard lump or elevation in the skin, larger than a pimple. *Wheals* are raised, irregular, elevated patches or ridges as seen in nettle-rash. A *scab* is a dried secretion formed by blood, serum, or pus exposed to the air. A *cicatrix* is a scar. *Excoriation* is technically described as a breach of the upper layers of the skin—in simple words, it is a raw cracked skin surface due to irritation, e.g., *intertrigo,* soreness resulting from the apposition of two skin surfaces.

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* *See page* 53.

LECTURE XIV.

Nursing of Infectious Diseases—Incubation—Invasion—Eruption or Rash—Febrile (Fever) or Acute Stage—Defervescence—Special Points for Observation — Scarlet Fever (Scarlatina) — Incubation Period—Invasion or Onset—The Rash—Circumoral Pallor —Desquamation—The Tongue—The Throat—Complications—Nursing.

In previous lectures* I spoke of the choice and preparation of the sick room for infectious diseases, general rules for disinfection, personal precautions of the nurse, etc., and the nursing of tuberculosis, typhoid and diphtheria, so that I shall not discuss the principles of disinfection, or the nursing of these diseases, because they are the same in children's work and it would be needless repetition.

INFECTIOUS DISEASES.

Scarlet fever, measles, chicken-pox, whooping cough, and mumps are most common in childhood and are all highly infectious. *All* infectious diseases are due to *germ* invasion. Infection occurs through contact with (1) the patient, (2) excreta or discharges from the patient, (3) articles worn or handled by the patient—called fomites, (4) from contaminated water, milk, or food, (5) through the air, or more correctly, the dust particles in the air. Now when lesions are present in the respiratory tract, e.g., sore throat, the germs are breathed into the air. In coughing, sneezing or even speaking, the germ may be conveyed into the air by fine droplets of moisture which adhere readily to floating dust. The germ-laden dust particles float in the air or settle on furniture, linen, etc., in the vicinity of the patient.

INCUBATION.

Incubation is the period from the time of infection to the first appearance of symptoms. During this time the germs are multiplying and manufacturing toxines. This process takes a certain time which varies in different diseases, e.g., measles, 14 days, and as trained nurses you are expected to know the incubation periods of the commoner infectious diseases.

INVASION.

As a result of this multiplication of germs and elaboration of toxines in the system, symptoms peculiar to the disease appear, and their onset is known as the stage of invasion.

ERUPTION OR RASH.

In those diseases characterised by a rash, this appears at a variable interval from invasion, e.g., in chicken-pox the rash appears on the same or the following day.

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* *See "Modern Medical and Surgical Nursing for Probationers."*

FEBRILE (FEVER) OR ACUTE STAGE.

This also varies according to the disease and is followed by the period of—

DEFERVESCENCE

or the fall of the temperature and general subsidence of symptoms preceding convalescence.

SPECIAL POINTS FOR OBSERVATION.

The special points which will assist the doctor to a diagnosis, and which a nurse is expected to report upon in addition to the symptoms are (1) the probable length of the period of incubation. (In taking the history try to find out how and when the patient was infected, e.g., epidemic at school, train or tram journeys, visit to a picture house, etc.) (2) The time between the invasion or manifestation of symptoms and the appearance of the rash. (3) Where the rash first appears and the regions on which it successively appears in the order of development. (4) The nature of the rash.

SCARLET FEVER (SCARLATINA).

There is an erroneous idea that the word scarlatina denotes a mild form of scarlet fever—scarlatina is simply the technical term for scarlet fever. The severity of the disease varies from an attack so mild that it may be missed, to a condition in which the poison is so virulent that death may occur in 24 or 36 hours. Mild attacks are distinctly dangerous (a) to the community, since they may be responsible for an epidemic, (b) to the infected person, who may suffer from more serious complications, owing to the fact that the initial disease is not recognised. Children with whom there is no history of a rash, vomiting or sore throat, are brought to our wards in a late stage of desquamation, suffering from acute nephritis, (inflammation of the kidneys.) The "missed" rash is, perhaps, not to be wondered at when the normal coloured "birthday suit" of these children appears at weekly intervals only, after the Saturday night bath! And as they often eat unsuitable food, an attack of vomiting is so common as to call for no comment.

INCUBATION PERIOD.

This is said to be from a few hours to a week. In the majority of cases it is from two to four days.

INVASION OR ONSET.

The onset may be sudden, whilst the child is playing or at school. He vomits, complains of the throat, the skin is hot and dry, there may be headache and aching of the limbs, the temperature is raised and the pulse rate quickened. In small children, convulsions may usher in an attack. Sore throat is not so prominent a symptom in children as in adults.

THE RASH.

About two days after the onset of the symptoms, the rash appears, first on the chest and sides of the neck, then on the flexor surfaces of the arms and legs. It extends over the whole body until about the sixth day, when the skin presents an uniform scarlet appearance. The rash is a diffused erythema (redness) with a punctate (little points) appearance. In doubtful cases it is useful to remember that the face escapes—in scarlet fever there is *no punctate rash on the face* —it will be flushed, but there is no eruption.

CIRCUMORAL PALLOR.

The circle of skin round the mouth is usually pale, and this is called the circumoral pallor, but it is not peculiar to scarlet fever as the pallor appears in other diseases.

DESQUAMATION.

In a typical case, the rash begins to fade about the sixth day, the other symptoms subside, and desquamation (peeling of the skin) begins. Desquamation usually begins where the rash first appears, i.e., on the chest, and the last parts to desquamate are the hands and the feet. There appears to be a definite relation between the severity of the rash and desquamation, e.g., a mild rash is succeeded by a "powdery" desquamation and an intense rash by one in which the skin peels off in flakes.

THE TONGUE.

The tongue is nearly always dirty and furred in scarlet as in most fevers. One hears a good deal about the "strawberry tongue" of scarlet fever, but those pointed out to me as the "typical strawberry tongue" never suggested that fruit to my imagination—except in an unripe stage, perhaps. The vivid red papillæ project through the white fur and this does, perhaps, somewhat resemble an unripe strawberry. The white fur clears, starting at the tip, and in a day or two, the whole tongue is clean and bright red—in fact, it has skinned or desquamated.

THE THROAT.

The child may not complain of sore throat, as in mild cases there may be no more than a dryness or discomfort of the throat. In a well-marked case, the back of the roof of the mouth (soft palate), fauces and tonsils are a vivid, glistening red, and where the child has a superadded, septic infection, little white patches which may ulcerate, or, by coalescing, appear like a membrane, are seen on the tonsils. The glistening, rosy, congested throat appears to cause children more pain and distress than the septic throat.

COMPLICATIONS.

I have found in teaching that nurses find it difficult to follow the association of certain complications—e.g., nephritis, with scarlet fever. If you remember that the toxines of scarlet fever enter the system through the mouth and throat, passing into the blood circulation from the throat, it is not difficult to connect the possible sequelæ of (1) adenitis (inflammation of the cervical glands), (2) otitis, from extension of the inflammation along the eustachian tube to the middle ear, which may terminate in (3) mastoid suppuration. In the case of (4) nephritis, which is one of the commonest and most dangerous complications of scarlet fever, the toxines irritate the kidneys and so cause inflammation. In consequence of this disorganisation, the kidneys do not "filter" properly, and allow substances which should be kept back (albumen) to pass through. In severe cases of nephritis, the kidneys may be so seriously affected that blood and other renal casts are found in the urine. If this serious condition is not recognised and treated, diminution or even complete suppression of the urine may occur, and uræmia will result from the accumulation in the blood of waste products, which otherwise would be excreted. Again, the toxines circulating in the blood are deposited in the joints and inflammation of a rheumatic nature results. This is not a common complication in children under twelve. Chorea, pneumonia, endocarditis and pericarditis are rarer complications.

NURSING.

The patient must be strictly isolated. (Full details of isolation and disinfection in the nursing of infectious diseases are given in Lecture 38 in "Modern Medical and Surgical Nursing for Probationers," and to avoid repetition it is intended that that lecture, together with those describing "tepid sponging," "swabbing of the throat," and other treatment mentioned in this lesson shall be taken in conjunction with this.) To avoid complications, *complete rest* in bed is imperative. The temperature, pulse and respiration must be taken and charted four-hourly during the acute stage, and morning and evening until the child is discharged. Children are very restless and may be delirious during the acute stage. Tepid sponging is frequently ordered, and if there is much irritation of the skin, bicarbonate of soda, one drachm, or Cyllin half-a-drachm, may be added to a quart of water. In cases of marked delirium, warm packs may be ordered and are very soothing. The diet consists of diluted milk only, given at regular "clock time" intervals, during the febrile stage. An abundance of water, barley water or *very* weak lemon water should be given, to lessen the risk of nephritis and other complications. The mouth must be kept scrupulously clean; the tongue and gums should be carefully cleaned with forceps dressed with wool dipped in peroxide of hydrogen one drachm to one ounce, or the antiseptic ordered by the doctor, *before* each feed. It is most important to secure a thorough evacuation of the bowel at the beginning of the attack, and the doctor usually orders Mist Alba or some other saline aperient. As the toxines gain entrance through the throat, obviously good nursing demands that this shall be kept as clean as possible. Syringing, or where there is thick mucus to clear away, swabbing of the throat may be ordered. All mouth and throat treatment must be done with extreme gentleness. Though children always object to it at first, they soon find that they are relieved and cease to struggle and protest. Syringing with lotion is very soothing to the congested throat. The nurse must watch the glands of the neck carefully, and any pain or swelling must be reported to the doctor. He may order painting with tincture of iodine, glycerine and belladonna, or simply cotton wool or fomentations to be applied. The wool is frequently ordered, and a nursing point to remember is, that a "collar" of wool is not ordered. A pad of wool must be placed around the angle of the jaw and behind the ear—*not* round the neck, "collar-fashion." The pad must be secured by a bandage passed over the head, or, better still, a "dutch" bonnet.

Where there is a nasal discharge (rhinitis) the nose must be swabbed frequently with an antiseptic, but it must not be syringed unless ordered. The urine in all scarlet fever cases must be tested *daily* as a routine practice for albumen and blood, because the early symptoms of nephritis are not subjective, and it is important that any trace of albumen should be detected immediately. Great care must be taken, especially in bathing, that the child is not exposed to draughts; a chill is a most serious thing in scarlet fever and predisposes to nephritis. All degrees of albuminuria may be met with in the course of the disease, from the "faint trace" to a quantity which gives an almost solid urine on boiling, with which well-marked renal symptoms are present. Nephritis may appear at any time, but it is most common in the third and fourth weeks. The symptoms are indefinite; the child will be fretful, there may be headache, and vomiting is a common sign. The glands may become swollen and the throat painful again; in neglected cases, the symptoms previously mentioned supervene — i.e., diminution or even suppression of urine, pallor, dropsy, and subsequent development of uræmia. Treatment is directed toward relieving the kidneys by (1) strict limitation of the diet to milk and barley water, (2) getting the skin to act by means of blankets and hot bottles, hot air baths or hot packs (the child must be clothed in flannel), (3) keeping the bowels loose by the use of saline aperients.

You will remember that the *mildest* case must receive the same care, because the complications do *not* depend on the severity of the attack. Doctors differ with regard to the treatment of the skin during desquamation. Some order anointment of the whole body with eucalyptus or weak carbolic oil, so that the skin is disinfected, and particles of it cannot blow about; others order daily bathing with the *temperate* use of pumice stone, more particularly to the horny skin of the heels. Nurses are sometimes too eager to assist "peeling" and attempt to pick off shreds of skin—this may lead to sores which take a long time to heal, and in any case, scaling is not assisted thereby. Also, it must be borne in mind that a child is *infective* as long as he has any discharge, even from a small sore. Formerly, it was held that infection was spread by desquamation, but modern teaching lays great stress on the infectivity of discharging ears or nose, and the child must *not* be considered free from infection so long as these are present. A child was admitted to a surgical ward suffering with post-scarlatinal empyema and a serious outbreak of scarlet fever in the ward was the result. This will impress upon you the infectivity of the discharges. In young children it is difficult to localise earache, and it sometimes happens that the child is restless and fretful for a day or two, when a discharge will appear from an ear. This is due to suppuration of the middle ear (otitis media). The middle ear is infected from the throat viâ the eustachian tube. If suppuration occurs, and the pus cannot escape through the tympanic membrane, there is the danger of it spreading into the mastoid cells, or even into the meninges of the brain. If the child has a rise of temperature for which there is no apparent cause, and is restless and fretful, the ear should be examined. You must watch carefully for tenderness over the mastoid bone, and any reddening of the skin, so that the membrane may be punctured to allow the pus to escape. Apply hot fomentations and clean the external ear gently but thoroughly with peroxide of hydrogen (one drachm to four drachms of water). Nurses must *not* syringe children's ears without definite instructions, and, until expert, never in hospital, except under Sister's supervision. Rheumatic pains are uncommon in young children. When the temperature is normal, milk puddings and fruit may be given; fish may be taken at the end of the second week, and so long as there is no albuminuria an egg every second or third day. Dieting in scarlatina has always to be considered with an eye to the possibility of kidney trouble, and for this reason it is best to limit red meats, meat soups, etc. White meats—chicken and rabbit—may be given later. Plenty of milk should be given through the entire course of the disease, because of its diuretic action. After "bathing out"* these children should be clothed in woollen garments, good warm stockings, and well-soled boots, and they ought always to spend a week or more at the sea or in the country.

LECTURE XV.

Measles—Incubation Period—Invasion or Onset—The Rash—Nursing—Convalescence—Chicken-Pox (Varicella)—Incubation Period Onset—The Rash—Nursing—Mumps (Epidemic Parotitis)—Incubation Period—Onset—Complications—Nursing—Poppy-head Fomentations.

MEASLES.

Measles is a *highly* infectious disease, particularly fatal in children; nearly 98 per cent. of all deaths from measles occur among children below the age of 10. The infection is conveyed by direct contact with the person suffering from the disease. The most infectious period is at the stage of invasion; the discharges from the eyes, nose and mouth—especially the mouth—are very infectious and are the chief means by which measles is disseminated. No nurse trained in our hospitals is likely to under-estimate the gravity of measles, but on the district, where it is looked upon as a necessary evil and considered inevitable, it is necessary to teach the mothers that it is a serious disease in small children, and, in view of its grave complications, one to be guarded against in every possible way.

INCUBATION PERIOD.

The incubation period is 10 to 16 days.

INVASION OR ONSET.

The onset is marked by all the symptoms of a severe cold in the head (this condition is known as coryza). The eyes are suffused, there is running of the nose with sneezing and a rise of temperature. There is a short "barking" cough and probably sore throat. There may be headache and vomiting, and convulsions are common in young children. Photophobia, i.e., dread of light, is usually present. All the mucous membranes are particularly prone to catarrh, and if you remember this you will understand the need for guarding against the grave complications of bronchitis, pneumonia, stomatitis, ear and eye troubles, and, in ill-nourished children, cancrum oris or gangrenous stomatitis. During the period of invasion, inside the mouth, on the cheek, at a level with the lower molar teeth, may be seen a few whitish spots with a red margin. These are Koplik's spots, a valuable aid to the doctor in the diagnosis of measles.

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* *See "Modern Medical and Surgical Nursing for Probationers,"* p. 180.

The Rash.

The rash is very characteristic and easy to recognise. It is a dusky red eruption of slightly raised spots, appearing in crescentic patches with normal skin between. It occurs first of all behind the ears and on the face, thickly around the mouth, then spreads to the neck, chest and arms, and gradually over the abdomen and legs. On the face the rash is confluent, whilst on the trunk the spots are separate in the early stage. The rash fades in about three days in the order in which it appears, leaving a mottling which may last a week or so. There is usually a branny desquamation, but this is not of importance.

Nursing.

Measles must be nursed with the possible complications in view, and as prevention is always better than cure, abundance of fresh air is absolutely imperative. A well-ventilated room with an *equable* temperature is of primary importance, and the *largest* room available should be secured. This is the best way to prevent lung complications. The child must be kept in bed until all signs of catarrh have disappeared and the temperature has been normal for four days—this is usually in about ten days. Children often feel quite well enough to get up immediately after the acute stage, but should not be allowed, because of possible complications. If the eyes are painful they should be protected from light, preferably by a screen suitably arranged; this is better than drawing window-blinds which keep out the air. The eyes should be regularly bathed with boracic lotion as routine treatment. The mouth must be frequently swabbed with the antiseptic mouth-wash ordered, and must always be cleansed before feeds. Liquid diet only is given in the feverish stage; diluted milk, chicken broth, or Benger's food is eagerly taken and jelly is much appreciated. Virol also is valuable as it raises the child's resisting power by its specific action on the leucocytes, which, as you know, destroy the infective bacteria. Plenty of water should be given. If the temperature is high, tepid sponging may be ordered, and hot packs soothe the child if there is delirium; the sponging should be done with a tepid solution of soda bicarb or a weak solution of Cyllin (half a drachm to a quart). The alkaline solution allays any irritation of the skin. If there are symptoms of laryngitis a bronchitis kettle should be used from the first. Lung complications may be suspected if the temperature does not drop, or if, after falling, it rises again with increased respiration and pulse rates and the presence of a cough. The nursing of pneumonia is given in Lecture IX. Children with adenoids are especially liable to middle ear disease and any suspicion of earache must be reported to the doctor. Diarrhœa may prove troublesome, especially in young children, and though it is most desirable that the bowel should be cleared at the onset of the disease, care must be exercised in the choice of aperients. As this may be left to the nurse, it is well to remember that in severe cases an intractable diarrhœa may be set up, and for this reason it is best to give castor oil or liquid paraffin.* Cancrum oris is a rare complication and a very fatal one; it begins as a small inflamed patch on the inside of the cheek or on the gum; the inflammation spreads rapidly and a patch of black slough which resembles moist gangrene appears. The slough is cut out and the parts cauterized with pure carbolic. I have known a child recover after this, so it is worth while persevering with nourishment and stimulants (which are always ordered) at frequent intervals.

CONVALESCENCE.

The child should not be allowed to go out of doors for several days after getting up, and then only if the weather is mild. You must always keep in mind the possibility of bronchitis, etc.: the lungs remain susceptible for three or four weeks. Of course, if catarrh persists, the child must be kept isolated, and, in any case, the rule of three weeks' isolation must always be enforced.

CHICKEN-POX (VARICELLA).

Chicken-pox is a *very* infectious disease which generally runs a mild course for about a fortnight. It is spread by personal intercourse.

INCUBATION PERIOD.

The incubation period is from 12 to 18 days.

ONSET.

The onset is not marked by any special symptoms. The child may be fretful, but the first sign of the disease is the rash, which is usually accompanied by a slight rise of temperature.

THE RASH.

The rash, which appears on the first day, consists of small, red, raised spots (papules), which quickly become vesicular. At this stage (before the fluid becomes turbid) the vesicles look rather like drops of water or glass beads scattered over the skin. In about 24 hours the vesicle dries and a yellow crust is formed which soon drops off. The rash appears first on the chest, then on the face, scalp and body generally; it comes out in crops and may be seen in the three stages of development at one time, viz., papules, vesicles and crusts. The rash is never abundant and is generally most plentiful about the trunk. Chicken-pox is a most tiresome complaint to get in the wards, so if you notice a child with little vesicles or "glass beads" on the body, when bathing, draw Sister's attention to it immediately, even although the child seems much as usual. Chicken-pox spreads very rapidly in the children's ward, and when

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*"*Virolax,*" *prepared by Virol, Ltd.*, 152-166, *Old Street, London, E.C., is a combination of pure liquid paraffin and Virol. It is quite the most palatable and efficacious preparation I know, and a perfect boon in the children's ward, where it is taken with avidity.*

TABLE SHOWING STAGES AND COMPLICATIONS OF COMMON INFECTIOUS DISEASES.

Disease.	Incubation period.	Symptoms of Invasion.	Day rash appears	Character and distribution of rash.	Complications.	Isolation period.	Quarantine.
Chicken-pox (varicella).	12 to 18 days.	Nothing definite.	1st day.	Red, raised spots (papules), which become vesicular. Appear first on chest, face, then trunk; come out in crops.	Debility, pyogenic infection of pocks resulting in abscesses.	One week after last crusts have dropped off.	21 days.
Diphtheria.	Few hours to 4 days.	General malaise, sore throat, vomiting, albuminuria.			Heart failure, paralysis, bronchitis, pneumonia.	Three weeks if there are no discharges and no albumen, and if bacteriological examination of cultures from nose and throat are negative.	12 days.
Measles (rubella).	10 to 16 days.	Bad cold in the head, suffused eyes and running nose, barking cough, "kopliks" spots.	4th day.	Dusky red slightly raised spots, coalescing in crescentic patches. Appear on face and neck first, then trunk and limbs.	Laryngitis, bronchitis, pneumonia, enteritis, ear and eye troubles.	Three weeks.	16 days.
Mumps (epidemic parotitis).	12 to 26 days.	Malaise, vomiting, swelling of salivary glands.			Swelling of other glands of the body, debility.	Not less than three weeks and then only if one week has elapsed since swelling subsided.	21 days.
Scarlet fever (scarlatina).	Widely, a few hours to a week. Generally 2 to 5 days.	Sudden onset, vomiting, headache, sore throat.	2nd day.	Bright red flush with punctate appearance. Appears first on chest, sides of neck, flexors then trunk. There is *no* punctate rash on face, only flush.	Nephritis, ear and eye troubles, rheumatism and rarely, chorea, endocarditis and pneumonia.	Never less than six weeks and then only if desquamation is complete and there is no albuminuria.	10 days.
Typhoid fever (enteric).	7 to 21 days.	Onset insidious, malaise, headache, diarrhœa or constipation, nose-bleeding, aching limbs.	6th to 8th day.	Small, pale pink, round, slightly raised spots which disappear on pressure. Appear first on abdomen and lower part of chest, come out in crops.	Hemorrhage, perforation, peritonitis, pneumonia, phlebitis, pyæmia.	Indefinite, depends on strength of patient and course of the disease. Some patients are "carriers." Bacteria are found in stools for an indefinite period.	23 days.
Whooping cough (pertussis).	5 to 14 days.	Hard, dry spasmodic cough. Child has bad cold and looks puffy, vomits after food.			Convulsions, debility, wasting, broncho-pneumonia.	Not less than five weeks from the commencement and then only if the whooping and cough have ceased.	21 days.

it attacks those with surgical dressings, is a really serious thing. Your observation and prompt report will probably result in immediate isolation of the child, and perhaps prevent an epidemic.

NURSING.

There is a tendency amongst young nurses to regard chicken pox as a mild disease which requires no nursing. Now this is a mistake, and more especially in our hospitals. Children admitted from outside are badly nourished, and the skin is in a poor condition. If the pocks become inflamed, sloughing or even gangrene may occur, and the child may die from septic poisoning; therefore, these children require careful nursing. The great thing is to *prevent* the pocks becoming infected with pyogenic (pus-forming) bacteria, a by no means simple matter in our hospitals, even in the isolation ward. The patient must be isolated and kept *in bed* in a warm room. The best treatment, since it is preventive as well as soothing, is to sponge the child twice a day with a weak solution of Toxol or Cyllin (one drachm to two quarts) for the first two days, whilst the temperature is raised, and after the temperature falls, the child should have a mild antiseptic bath daily, after which the skin may be dusted with equal parts of boracic, zinc oxide and starch powder. The finger nails must be kept very short since there is always some irritation of the skin and if the child is too young to understand that he must not scratch, cardboard splints, padded with wool, extending from above the elbow to beyond the finger tips, must be applied. The hair should be cut away round any pocks on the scalp, and in the case of a girl, as little as possible must be removed. Should any pocks become inflamed they must be treated with antiseptic fomentations, and, please note, with aseptic precautions, particularly if the skin is broken. Bier's cupping glasses are a valuable auxiliary treatment where the skin is tense and inflamed. The diet should be light, but nourishing, plenty of milk, eggs, fish, etc. If there is much debility, Virol is valuable and tonics are usually ordered. After all the crusts have fallen off, the child is said to be free from infection.

MUMPS (EPIDEMIC PAROTITIS).

Mumps is an acute infectious disease due to a germ—which has not yet been discovered. It occurs in children between the ages of five and fifteen. This is another disease to which people as a rule do not attach sufficient importance and this is quite a mistake, because children, boys especially, are sometimes very ill with an attack of mumps. Any case of mumps, no matter how slight, needs care and attention, in view of the possible complications, and this applies particularly to children in Poor-Law Hospitals.

INCUBATION PERIOD.

The incubation period is a long one, being anything from 12 to 26 days. The patient may be infectious before definite symptoms appear and remain infectious after they have disappeared. The infection is contained in the saliva and is transmitted from the patient to others.

ONSET.

After a period of general malaise, the onset is marked by rise of temperature, vomiting, and swelling of the parotid salivary glands on one side of the face and neck. The swelling is over the angle of the jaw, in front of, under, and behind one ear; in consequence of the swelling the jaw is stiff, and this makes the act of swallowing acutely painful, so that the child cries out. Later both sides may be affected, or the inflammation may subside on the one side to reappear on the opposite side in a few days.

COMPLICATIONS.

There may be swelling of the glands in other parts of the body. In girls, this may take the form of troublesome inflammation of the breasts, or in rare cases of the ovaries. In boys, the testicles may become inflamed, and they look very ill indeed with this condition; fortunately, it usually subsides in a few days with rest and care. Rarely, in severe cases, there is acute abdominal tenderness and pain, with vomiting; this is said to be due to pancreatitis, the pancreas being similar to the parotid gland in structure. I think you will understand now that this disease may be anything but mild, if neglected (especially among the debilitated or diseased children who are admitted to our hospitals) and must not be dismissed airily as "only mumps." Of course, for one case presenting the severe symptoms I have described you will see many uneventful cases, but *any* case may develop complications if neglected.

NURSING.

The patient must be isolated and kept warm in bed for at least a week. This will help to prevent complications, and is the best treatment for the disease itself. The mouth must be cleansed regularly with forceps dressed with wool and dipped in the antiseptic mouthwash ordered. This may be difficult where the jaws are stiff, but it *must* be done regularly and thoroughly if complications are to be avoided. Encourage the child to rinse out the mouth frequently with a weak solution of Condy's fluid as well as he can. The diet is semi-fluid whilst there is difficulty in swallowing. Children take thickened drinks, e.g., Benger's food, gruel, or thin cornflour better than milk, because they are less difficult to swallow than "thin" drinks. Jelly is appreciated. It is essential that the bowel should be thoroughly cleared as early as possible, and some doctors order a dose of calomel at the onset. Local treatment consists in the application of heat, either as fomentations or hot wool well bandaged on. Painting the parts with glycerine or glycerine and belladonna may be ordered. If using the latter, watch for signs of absorption, which are dilated pupils and dryness of the mouth (xero stoma, "xero" meaning dryness and "stoma" mouth).

POPPYHEAD FOMENTATIONS.

Poppyhead fomentations are a favourite application which may be ordered in private practice. They are made as follows. Break a quarter of a pound of poppyheads and empty them of the seeds. Boil the heads in three pints of water for half an hour. Strain off the decoction for fomentations. Pour the hot fluid over the heads again each time after use. This quantity can be used many times with economy.

LECTURE XVI.

Surgical Work—General Treatment of Operation Cases—Preparation of the Bowel—Giving an Enema—Preparation of the Bladder—Preparation of the Skin—Restraint—Nursing after Operation—Shock—Symptoms—Treatment.

SURGICAL WORK.

Only practical experience under a good Sister in the children's ward can teach a nurse all she should know about children's surgical nursing. Every variety of operation differs in some essential nursing points, and it is just the knowledge and practice of these details that make the successful nurse. For instance, the success of an operation on joints or bones depends on the perfect maintenance of the parts in a correct position, or in the case of operation for harelip on keeping the child fairly content so that it does not cry, and knowing how to feed under those conditions.

In these lectures I can but explain the essential details and point out the principal dangers, and you must apply the theory to your practical work as opportunity arises. There is *no* little or unimportant point in surgical work, and inability to grasp this truism means failure. It is especially necessary to remember in children's work that no two patients are alike, and if you quite realise that you are nursing a child with an individual temperament, *not* just an appendectomy or hernia case, you will have mastered an important point in the nursing of all children, excepting, perhaps, quite young infants.

General Treatment of Operation Cases.

In previous lectures* I have dealt at some length with the subjects of shock, reaction, general preparation of the patient for operation and post operation nursing, so that, to avoid repetition, I shall here speak only of special points affecting children. In nursing children after operation the main points to remember are (1) their instability, (2) their low power of resistance. Children suffer more through loss of blood and from shock than adults. The preparation for operation consists in (1) preparing the stomach and bowel for anæsthetic by the regulation of diet, aperients and enemata; (2) making aseptic the skin of the site of operation.

Preparation of the Bowel.

This entirely depends on the surgeon; some order aperients and enemata, but many surgeons now-a-days dispense with enemata for children, and I must say that the children who are not subjected to the fatigue and disturbance of preliminary bowel flushing, undoubtedly suffer less from shock after operation than those who are.

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* *See "Modern Medical and Surgical Nursing for Probationers."*

Little children often seem quite exhausted after an enema, especially if they are ill. It is usually exceedingly easy to empty a child's bowel. A popular preparation of the bowel is to give from two to four drachms of castor oil (according to age) two days before operation, after the evening meal; this gives ample time for the bowel to clear. Of course, if there is any doubt as to the bowel being empty, an enema can be given in the early morning of operation. The child is napkined before sending to the theatre if practicable. In one children's hospital we had a routine preparation of the bowel. All cases for operation *below* the waist line had two enemata, one *eight* hours before operation, followed by a second *four* hours later. Children for operation *above* the waist line, on the upper part of the body, had *one* simple enema, four hours before operations. Exact instructions *must* be obtained from the doctor concerning aperients and enemata for *any acute abdominal condition.*

GIVING AN ENEMA.

When enemata are ordered they should be given by gravitation because, given so, they disturb the child less. For an infant, 6 to 8 ounces (or less) is sufficient, and an additional 2 ounces for each year of age up to ten may be given to older children, according to age. It is best to arrange young children comfortably on the bed-pan and to give the enema in this position, because they nearly always strain, so that some fluid may be returned immediately. It is important that the enema should be properly given or there may be an accident on the operating table which is the result of a badly given enema. The most convenient method is as follows, especially for infants:—Attach a Jacque's catheter (No. 8) to a douche-bag tube by means of a connecting glass tube, the tube of a douche-can or a glass funnel; prepare half-a-pint of soap suds with castille soap or special soft soap, at a temperature of 100F. Remove the bubbles. Put on a warm mackintosh and flannel apron. If the funnel is used an assistant is required. For infants, the enema must be given before the fire; ill babies cannot afford to run the risk of chill. Lay the baby on his left side on your lap; tuck up the gown out of the way, place a warm diaper under the buttocks. (Sit in such a position that the babe will run no risk of being scorched—it is necessary to remind young nurses of this.) Flex the legs, hold the feet in one hand, smear the anus with vaseline, and introduce the lubricated catheter *with the fluid running.* If the douche-can is used, you can manage single-handed quite well; place it not more than a foot above the buttocks. Do not allow the fluid to run too quickly—this is important. After the injection is given place a vessel (which must be warm) under the buttocks and cover baby with a warm blanket. Do remember the importance of keeping the child warm. It is convenient for the nurse to sit on a low stool; the douche-can may stand on a chair.

PREPARATION OF THE BLADDER.

Children must be made to empty the bladder before going to the theatre; there is rarely difficulty, but for laparotomy, the child must be catheterized if it cannot be induced to pass urine.

PREPARATION OF THE SKIN.

A good, hot, soapy bath is given the day before operation when practicable, special attention being paid to the site of operation. A young child's skin is very delicate, and though the skin must be thoroughly soaped, &c., it must not be made the least bit sore; this would be a serious drawback in an aseptic operation, in which healing by first intention is the object of aseptic technique and the surgical ideal. The iodine preparation is practically always used now. The skin is prepared as follows, the evening before operation: With aseptic precautions, the skin of the operation site (including a fairly large area surrounding the actual site) is painted with a 2½ per cent. solution of iodine. The site is then covered with a piece of sterile lint and secured with a sterile bandage. Note, there must be no preliminary washing of the site with soap and water before the iodine preparation except by special orders—some surgeons adopt this method of washing and have the skin dried by free swabbing with methylated spirit which absorbs the moisture. The iodine acts by penetrating the superficial layers of the skin where bacteria flourish. If the skin is moist the cells swell and the iodine is not absorbed by them. Great care must be taken not to expose the child more than necessary, only the part to be painted should be uncovered. If the dressing is on the lower part of the body—e.g., inguinal hernia—care must be taken to prevent it being soiled by the evacuations; for a young child, the dressing may be covered with jaconet. The nurse must watch that the child does not get his hands underneath the dressing and they must be fastened if there is any danger of this. For the operation the child must wear a flannel gown and long woollen stockings. Young babies are best wrapped entirely in cotton wool which should be lightly bandaged on. The following things must be placed in readiness for the child's return from the theatre:—Hot water bottles in the cot, hot blankets, porringer and towel in case of vomiting, sandbags, cradle, &c., according to the nature of the operation; any necessary appliances for restraint.

RESTRAINT.

If the nurse can give undivided attention to a young child there is no objection to its being nursed in the majority of cases, and this is particularly advantageous in the case of young infants who may be got to sleep in this position. Where the nurse cannot give undivided attention to the child, it may be necessary to adopt some means of restraint to prevent him from interfering with the dressing and to keep him lying down. The manner of restraint depends on the operation. To prevent kicking, a bandage may be loosely knotted round the ankles, secured by a clove hitch, and attached to the cot foot rails (not the side rails which are movable), thus controlling the legs just sufficiently to limit movement to a safe degree. The arms are restrained sufficiently to prevent the child getting at the dressing, but here, also, to allow of as much movement as is safe. In the case of abdominal dressings, lay a towel across the child's abdomen and place a long sandbag on it each side of the body; see that the towel does not pinion the child to interfere with respiration. For gland cases, a towel may be folded lengthwise and placed across the child's forehead with a sandbag on each side. *Note*: No mechanical restraint in the *least* degree may be applied in a Poor-Law hospital for any purpose whatsoever, except with the doctor's permission. To keep the child lying down, shoulder straps are sometimes used, a piece of webbing being passed through them behind the child, and fastened under the cot by means of a buckle. Children stand starvation badly, and if kept long without food are apt to collapse. Further, children who have been kept without food for a longer period, seem to suffer more from anæsthetic sickness than those who have been kept without for a shorter period. Except in certain conditions—e.g., gastric or appendectomy cases—in hospital a child is usually allowed his ordinary food up till dinner-time of the day previous to operation. At tea-time bread and milk is given, then nothing more until four hours before operation, when Bovril, about five ounces, may be given. It is important that young babies should miss as little nourishment as possible, and for this reason the feeds must be so arranged that the operation is done at the hour the next feed is due. Feeding after operation depends entirely on the surgeon, who is guided by the nature of the operation. Babies are fed as soon as they are able to suck because this stimulates them and counteracts shock. The first few feeds should be more diluted than usual. Most cases now-a-days are allowed plenty of water. Fluid diet only—e.g., whey, albumen water, milk, Benger's, &c.—is allowed until the bowels are moved, then bread and fish panada, fowl and a "butty" without the crust may be given. It is surprising how soon little children recover and are back on their normal diet again.

NURSING AFTER OPERATION.

The child is brought back from the theatre to a warm bed. A warm blanket is placed over him and two hot-water bottles, well protected, are placed, one at his feet, and one at the side with *the blanket between the bottles and the child*; this rule must *never* be broken, because little children under anæsthetic burn very easily. The child must *not* be left until he is round from the anæsthetic. The head is kept low until he is conscious and must be well turned to one side in case of vomiting. The vomited matter may be drawn back into the air passages during unconsciousness, thereby causing suffocation. Children suffer very little from anæsthetic sickness, but should vomiting be troublesome, a large alkaline drink is most effectual—one drachm of sodi-bicarb to one pint of warm water. This washes out the stomach and the vomiting usually ceases. Have a towel and bowl ready because the water is quickly returned. Nothing is given to drink until the child is conscious, when, if he is thirsty, drinks, taken in sips, are usually allowed. The surgeon's wishes with regard to drinks must be ascertained, but most allow up to five ounces in sips. It is a good, safe rule in hospital (and out of it) to give nothing to abdominal cases without orders.

SHOCK.

As you have been told, the amount of shock depends on the age and condition of the patient, the nature of the operation, and is increased where there is much loss of blood. Children suffer severely from shock and the treatment must be prompt or they may die of shock alone.

SYMPTOMS.

The face and lips are grey or pallid and the skin cold and clammy. The pulse is rapid, small and irregular, it may be almost imperceptible. The temperature is sub-normal. The respirations are shallow and become "sighing" if the shock is severe. The pupils are dilated. Now you must not waste valuable time taking the pulse and temperature of a child whose lips are pallid, skin cold, etc. ; the treatment *must* be prompt.

TREATMENT.

Apply warmth to the body—hot bottles and hot blankets. Raise the foot of the bed to determine the supply of blood to the brain. If the shock is severe, the foot of the bed must be raised to such an angle that the child is almost "on its head." Fluid is urgently needed to increase the amount circulating, so that the heart has something to "grip," as it were (this is what is meant by "raising the blood pressure"), and this is effected by saline infusion. Stimulants are usually ordered. Treatment for shock may be summed up as (1) warmth, (2) lowering the head, (3) saline infusion, (4) stimulants.

To give a rectal saline infusion (proctoclysis) attach a Jacque's catheter, size No. 8, to the nozzle of the barrel of a 4-ounce glass syringe. Prepare one pint of normal saline solution (one drachm of salt to one pint of boiled water) at a temperature of 105F. in a measure. Stand the measure in a jug or bowl of water at a temperature of 115F. The child is usually lying on the back and the bowel is empty after operation, so no preliminary lavage (washing) is necessary. Lubricate the catheter and introduce into the rectum for about five inches. Allow the fluid to flow very slowly. About half a pint at intervals of three hours is usually ordered for children; this should take about fifteen or twenty minutes to give. The funnel should be held about eight inches above the level of the rectum. By the time the fluid enters the rectum it will be about 103F., and that is none too warm. If given for shock the foot of the bed will be elevated, so that the pelvis is tilted, and a pillow under the buttocks is unnecessary. It may happen that the child is ordered to be nursed in the Fowler position—e.g., in a suppurative appendix case—and in this position the catheter is introduced into the rectum and kept in place by a piece of strapping.

LECTURE XVII.

Hernia—To Make and Apply a Woollen Truss—Operation for Hernia —Strangulated Hernia — Intussusception — Appendectomy — Imperforate Anus—Operations on the Bladder—Washing the Bladder—Operations on the Kidney—Phimosis—Circumcision Hare Lip—Cleft Palate—Mastoid Operations—Bone Operations.

SURGICAL WORK.

HERNIA.

Hernia is common in children, and may be umbilical, inguinal or femoral. Before operation is decided upon, the hernia is usually treated by means of a truss, and the success of this largely depends upon its proper adjustment by the mother or nurse. A truss is quite useless if the hernia is allowed to "come down" constantly. Nurses must remember that the truss must never be applied until the swelling is quite reduced. For the umbilical hernia, make a small firm pad of lint (a penny wrapped in the lint gives the necessary firmness), place over the hernia and secure with a broad piece of strapping which must come well over each side, as it is apt to slip. Apply a light binder or bandage over this. A spring truss made of leather or rubber is used for the inguinal and femoral hernia, the rubber being preferable as the leather soon perishes with the urine. There are several important points connected with the application of a truss. In children it is hoped that the truss will effect a cure, and for this reason it must be worn day and night; the child should be bathed in it, the truss being taken off just long enough for the parts to be dried and powdered thoroughly. Ointments must never be used, they ruin rubber. As soon as the truss is wet, it must be removed, dried and replaced whilst the child is lying down and *not* crying. It is convenient to have two trusses in use so that one may be thoroughly dried while the other is worn. They last about six months and should be renewed when worn through as the child outgrows them. The truss should not fit too tightly and the under-straps should be loose. A woollen truss is most useful for small infants because it can be replaced cheaply and washes so that it can be used again.

TO MAKE AND APPLY A WOOLLEN TRUSS.

Tie a skein of Berlin wool round the middle and at equal short distances from the ends. Slip-knot a piece of tape to one of the ends. Place the truss under the baby, who is lying down, with the taped end opposite the hernia. If the baby cries you cannot reduce the hernia. Quickly but gently manipulate the swelling in an upward direction with your thumbs and forefinger, until you feel it slip away; force must never be used. As soon as the hernia is reduced, slip the taped end of the skein through the free end, arranging the knot so that it lies immediately over the spot where the swelling disappeared. Pass the taped end round the groin and fasten the tapes to the truss behind, drawing them sufficiently tight to prevent the reappearance of the swelling, which will happen unless sufficient pressure is applied and over the proper area. A fresh truss must be ready every time baby is changed, so it is wise to make a stock of them. They wash well and can be used two or three times.

OPERATION FOR HERNIA.

The child is prepared in the manner previously described. After the operation, the wound is usually painted with iodine and a gauze and collodion dressing applied. The child must be kept dry and lying still, so that the wound is at rest. If the child wets the bed, powder freely with boracic powder after washing. The dressing should not need renewing until the sutures are removed. The diet is fluid until the bowels act, after which light solid food may be given. If the bowels do not act in 48 hours an aperient is usually ordered.

STRANGULATED HERNIA.

This is an extremely rare condition in the children's ward and is nearly always an emergency operation. The child is kept warm and *nothing at all* may be given by mouth before operation. The after-treatment is the same as for other abdominal operations. In some cases of apparently irreducible hernia, the surgeon may order a hot bath, followed by the application of ice-bags to the swelling, in an endeavour to reduce it, and this treatment may prove effectual. After the hot bath, place the child in bed with the pelvis well raised on a pillow; apply the ice-bag over the swelling with a piece of gauze between. A firm pad, bandage, boracic powder and safety pins must be ready on the locker, so that should the swelling disappear, the pad may be adjusted over the spot where it disappeared, without delay.

INTUSSUSCEPTION.

This is a grave form of obstruction occurring in infants and young children, in which one part of the intestine slips into the portion immediately beyond. The signs are vomiting and straining, with evacuations consisting of blood and slime. There may be *one motion and no more* (being the fæces already beyond the obstruction), and an important sign is that the child passes no flatus. The child's face is drawn and pale, there is abdominal pain and tenderness, with possibly a sausage-shaped swelling on the left abdomen. Opiates are given to arrest peristalsis and the surgeon may then attempt to disengage the telescoped bowel by the injection of air or water. If this is unsuccessful an operation is performed without delay. The nursing is the same as for other abdominal conditions, but if vomiting persists, the stomach may be washed out. It is most important that these children should be fed as quickly as possible after operation, even in spite of vomiting; they may have had no food for 24 hours before operation, and the child will die of inanition if not fed. If on the breast, he must be fed as soon as he will suck; if not, albumin water or diluted milk in half-ounce doses is usually ordered. An aperient may be ordered between the second and fourth day. Shock is always serious in these children and they need most careful nursing.

APPENDECTOMY.

Before operation the child is kept lying flat. Feeding and treatment are carried out strictly under doctor's orders. There is often acute abdominal pain, and these little ones need especially gentle handling. A cradle is necessary to support the weight of the bedclothes, and a pillow is placed under the knees. If the appendix has simply been removed, the child is nursed lying down, but if there is suppuration, to facilitate free drainage, he must be propped up, *securely* and *comfortably*, so that he does not slip. A firm pillow under the knees, a foot-piece, or where that is not available, a pillow, tightly-wrapped in a drawsheet, the ends of which are secured to the framework of the cot (not the side-rails, which are movable), will prevent the child slipping down. Pillows, or a bed-rest in the case of older children, must be arranged at the back. These cases need careful watching after operation; all cases nursed in the Fowler position are more liable to collapse, therefore the general condition and the pulse must be carefully watched, and if the pulse rate is unduly increased, the child must be lowered at once. Feeding of appendectomy and gastric cases after operation needs special consideration and is done strictly under doctors' orders.

IMPERFORATE ANUS.

Those of you who have taken maternity cases know that you are required to examine all new-born babies for any deformity, and imperforate anus may be one of them. This is a condition in which there is no anal opening from the rectum, though the bowel may be complete. The operation for this condition may be practically only an incision or may be more extensive; in either case the wound is kept as clean as possible until it is healed. After the operation, the nurse must notice particularly whether the bowels act at least once a day, and if they do not must report to the doctor, as there may be some obstruction of the bowel higher up. If the bowel is incomplete, a colotomy may be performed—that is, an artificial anus is made in the abdominal wall leading into the descending colon. If care is not taken, the skin surrounding the orifice becomes excoriated. To prevent this, spread boracic ointment on a square of old linen, cut a hole the exact size of the opening in the abdominal wall and apply; over this place gauze and sufficient wool to receive the fæces. A many-tailed bandage is applied firmly above and below the wound, but there must be *no* pressure *over* the wound. The dressing is changed immediately after an action of the bowel, the skin is gently washed, dried and powdered before the clean dressing is put on. These operations are always performed when the infant is a few hours old, and it is most important that he should be kept warm; he may be wrapped entirely in warm cotton wool and surrounded by hot bottles. The umbilical cord is treated aseptically in the usual way.

OPERATIONS ON THE BLADDER.

Operations on the bladder in children are usually performed for the removal of stone. The nursing before is the same as for other operations, except that, if there is cystitis, which is common, bladder washing is included in the preparation. A urine chart must be kept and the urine must be measured and tested daily from a 24 hours' specimen. Notice whether the urine is passed frequently in small quantities or if it dribbles away, whether the urine is offensive and if micturition causes pain or discomfort. You must also be able to report if blood is passed with the urine. The general after-treatment is the same as for other abdominal operations, except that the child may have ordinary light diet with large quantities of bland fluids such as barley water. These children practically always have a special nurse in a Poor-Law hospital, as they are restless and very difficult to keep still, so that it is not necessary to use restraint. But if you cannot give undivided attention to the child, then, if a catheter is left in position at the time of operation, the child's legs must be secured (as previously described) to the framework of the cot, and if he tries to get at the catheter, the hands must be fastened so that he cannot. If the catheter should be inadvertently removed, fresh ones must be sterilized and the doctor must be informed. The catheter is attached by a glass connection tube to a piece of rubber tubing, which is conveyed into a vessel at the side of the cot containing a measured quantity of boracic lotion. A nursing point is to see that the end of the tube is always under the fluid, so that air is not conveyed into the bladder. At intervals of 12 hours, the tube is clipped, the total amount of fluid measured and the amount of lotion subtracted, the remainder being the quantity of urine excreted in 12 hours. The day and night nurse do this before going off duty and report the quantity passed. Daily bladder washing is probably ordered.

WASHING THE BLADDER.

The following things are necessary:—A funnel and three or four feet of tubing. Several sterile catheters, sterile lubricant and a bowl of warm boracic lotion containing swabs. Sterilized measure containing about two quarts of boracic lotion at 100 F., a bowl for the dirty lotion, and a receiver for the urine, or a specimen glass if a catheter specimen of urine is required; aseptic towels and the necessary lotions for "scrubbing up" the hands. If a catheter has not been left in, the child is catheterized in the usual way with strict aseptic precautions, and if a catheter specimen is required this is drawn off into the specimen glass first. If a catheter has been left in, detach the tubing after clipping the catheter, run some fluid through the funnel and tube to exclude the air, pinch the tubing and attach to the catheter. Release the clip; raise the funnel to the level of the cot rail, and allow the lotion to flow gently into the bladder; not more than four ounces should be poured in at one time, and only one or two can be borne if the bladder is much inflamed. The funnel is then lowered below the level of the cot to allow the fluid to run into the bowl. The washing is continued until the fluid returns clear.

OPERATIONS ON THE KIDNEY.

The patient is usually nursed on the side operated upon; he must be comfortably arranged and supported by pillows. The urine is collected, measured accurately, and tested daily from a 24 hours' specimen.

PHIMOSIS.

This is the most common malformation of the penis in which the orifice of the prepuce or foreskin is so small that it cannot be drawn back over the glans. The condition gives rise to various troubles. There may be difficulty in micturition or the urine may dribble away; the straining may cause hernia and the irritation, convulsions, or it may result in the formation of bad habits, so that the condition should be relieved as early as possible by

CIRCUMCISION.

The child is prepared in the usual manner; a square of boric lint is arranged over the penis and secured with a clean napkin. Surgeons have their favourite dressing; some like gauze and collodion; others use strips of lint soaked in carbolic oil or spread thickly with boracic ointment. For older boys, strips of lint soaked in lotio plumbi (diluted one-half) are sometimes wrapped round the penis and secured to the abdomen by strapping. The child must be kept as clean as possible, and the dressing must be changed every time urine is passed. A hot bath may be given daily to soak off the soiled dressings, after which a clean one is applied. The complications are hæmorrhage, retention of urine and sepsis. Hæmorrhage is controlled by pressure or a ligature, retention is relieved by a hot bath and sepsis is treated with boracic fomentations—this should not occur if the parts are kept clean. The hot bath soothes an excited child, and this may always be given and a clean dressing reapplied carefully afterwards. Mothers should be advised to have their infants circumcised (when necessary) as early as possible.

HARE LIP AND CLEFT PALATE.

You are not likely to see these cases in a Poor-Law Infirmary, but they are common in a children's hospital. Hare lip and cleft palate are congenital malformations and may occur together or singly. It is important to have the child in hospital for some days before operation in order that he may grow accustomed to feeding and treatment as they are performed *after* operation. Before operation the child must be fed by a spoon, and in the case of cleft palate, the mouth must be sprayed frequently with boracic lotion, if this is the surgeon's treatment after operation. The child is taken up as little as possible to accustom him to lying without crying; crying after this operation is fatal to its success. Careful training in these points has a great deal to do with the success of the operation.

HARE LIP.

This may vary from a slight dent to a cleft extending into the nostril; it may be "single" when the division is on one side, or "double" when there is a cleft on both sides. The nursing consists in keeping the wound dry and in preventing any strain on the sutures. Great care must be taken during the first 24 hours to prevent any blood or mucus trickling over the wound. In some cases the breathing may become embarrassed, due to the nostrils being blocked with dried blood, etc.; it is therefore very important to keep the nostrils clear. If the dyspnœa is severe, depress the child's lower lip, so that he can breathe through the mouth. Feeding is a delicate and somewhat difficult matter; I think one of the best methods is as follows:—Bend the bowl of an egg spoon or small tea-spoon to form a channel. Hold baby on your left arm, press the spoon on the lower lip and allow the fluid to trickle into the mouth, taking care that it does not touch the upper lip. A pipette is useful for "hare lip feeding" after operation. The baby *must* be prevented from crying as this strains the sutures. Surgeons like to do these children under three months old if possible, and preferably in the spring or summer as they so soon catch cold. It may be necessary, in an older child, to secure the hands by a loop of bandage below the knee, to prevent him touching his mouth.

CLEFT PALATE.

Cleft palate may be anything from a small aperture to a wide cleft of the whole palate. It is often associated with hare lip but it may be present alone. The baby is unable to suck, food being returned through the nose. Older children speak nasally, and, as they cannot enunciate clearly, are often quite unintelligible, excepting to those who know them well. After operation, the feeding is carried out in the same way as for hare lip. The mouth may be gently syringed with a weak solution of Condy's fluid or bicarbonate of soda, if this is the surgeon's treatment. The baby's head must be held over a basin whilst syringing is done, so that no lotion is swallowed. Some surgeons prefer the child to have sterile water after each feed of milk instead of the spraying process, and results appear to be quite as satisfactory. In the case of a young infant, the palate can be painted over with a camel hair brush dipped in warm boracic lotion when he opens his mouth to cry. Older children are fed from a cup and must not be allowed a spoon or any toys which they may put in their mouth. They must not be allowed to speak, and should have a pencil and slate to make their wants known if they can write. Little children must be kept amused to prevent them crying. Some surgeons order nutrient enemata for the first few days; afterwards, older children may have such foods as custard, bread and milk panada, jelly, etc. To prevent the child touching the mouth, splints to the arms may be necessary; the elbows *must* be fixed; splints are useless if the child can bend the arm. After the sutures are out, special care is necessary for a few days to prevent tension on the scar, in the case of both hare lip and cleft palate.

MASTOID OPERATIONS.

These are always done for septic conditions, acute or chronic. Half the scalp should be shaved if cerebral abscess is suspected; for the usual mastoid operation an area of about 3 inches right round the ear is sufficient. The after-treatment consists in keeping the child very quiet; vomiting is often persistent and most troublesome. In acute cases the wound is dressed the day after operation and the nurse may be expected to do subsequent dressings. A most important point in this dressing is to thoroughly dry the sinus.

A popular dressing with many surgeons is as follows:—The gauze or rubber drain is removed and warm peroxide of hydrogen of a given strength is poured into the sinus; this is allowed to remain for three minutes, after which the sinus is gently syringed with warm boracic lotion, then very thoroughly dried with absolute alcohol. This smarts, but it *must* be done, the thorough drying being a *most* important detail. A gauze plug is loosely packed into the sinus and the dressing completed in the usual way. The peroxide is most conveniently warmed in a doll's jug from which it can easily be poured into the sinus. Stand the jug in a gallipot of hot water. The nurse must watch for signs of meningitis. These are—photophobia, extreme irritability and great restlessness with vomiting. The temperature is raised and convulsions may occur. A subnormal temperature and a quick pulse which becomes very slow, with drowsiness and vomiting, point to compression of the brain and probably mean cerebral abscess.

BONE OPERATIONS.

I shall say very little of these because the nursing is mainly directed toward keeping the limbs in the corrected position by means of special splints (or plaster) and avoidance of pressure sores, with generous feeding and abundance of fresh air and sunshine. I have already spoken in "Modern Medical and Surgical Nursing for Probationers" of the application of extension for hip-joint disease, and the nursing points to be observed. I may, perhaps, here say that children bear confinement in bed, in extension apparatus, with or without the headpiece, for a long period, remarkably well. I tell you this to relieve the mind of those young nurses who are apt to be unduly concerned at the prospect of little children being in bed for months at a time. But what I especially want to impress upon you is the fact that children over five suffer *most* acutely after operation on bones. On the district, the mother of a child with some bone deformity may say to you, "I shall have him seen to when he is a bit older." Now younger children do not suffer *nearly* so much as the older children, so if you have an opportunity, *do* persuade parents to have them seen to as young as possible. The nurse can do very little to relieve these poor children—nepenthe in small doses may be ordered four hours after operation and again after an interval of eight hours.

LECTURE XVIII.

Tonsils and Adenoids—Nasal Breathing—The Nasopharynx—Tonsils —Evil Effects of Adenoids and Enlarged Tonsils—Dangers of Mouth Breathing—Prevention of Adenoids and Enlarged Tonsils—Treatment of Enlarged Tonsils and Adenoids—Operation for Tonsils and Adenoids—To Make a Jaw Bandage.

TONSILS AND ADENOIDS.

The most chronic condition met with in the nose and throat in childhood is enlarged tonsils and adenoids. As prevention of this condition is an important branch of infant welfare, to which far too little attention is paid by some mothers and others responsible for the care of young children, I am going to describe simply the anatomy of the parts affected, some of the evils which may arise from the condition, and discuss measures which may be taken to prevent or cure the condition. Children suffering from adenoids are "mouth breathers," they breathe through the mouth instead of the nose. The child looks dull and stupid, due to the open mouth, small or contracted nostrils from disuse, and probable deafness.

NASAL BREATHING.

Now the *nose* is specially made for breathing through. It is so constructed that inhaled air is (1) filtered or purified, (2) warmed, (3) moistened. The filtering is accomplished by the air passing over the tiny hairs lining the nasal cavity; these, combined with the secretions from the glands, prevent the passage of dust and harmful germs. Germs cannot pass over a moist surface because they adhere, this is one of the uses of the nasal secretion. The lining membrane of the nose has a plentiful supply of blood vessels, so that as the air passes over the membranes it is warmed. When the air enters the nostrils it is thrown into little eddies by the turbinates (scroll-like projections into the cavity from the side walls of the nose), and this process delays the passage of the air sufficiently long for it to be warmed. The plentiful supply of glands in the nose gives sufficient watery secretion to moisten the air as it is inhaled. This will be impressed on your mind if you notice the difficulty of breathing in the dry atmosphere of a room where there is a gas stove—unless the discomfort is obviated by a small vessel of water placed near the stove. The sense of smell is also dependent on the moistened surface. We see then that the nose *prepares* the air for the lungs. The mouth is quite unfit for breathing; it has no arrangement for purifying, warming and moistening the air.

THE NASOPHARYNX.

There are two *back* openings in the nose (posterior nostrils) just as there are two anterior nostrils; these open into the *nasopharynx* or the space *behind* the nose; just below is the mouth with the opening (larynx) into the windpipe (trachea) which leads into the lungs. Lying behind the windpipe is the gullet or foodpipe (œsophagus); on each side of the space behind the nose (nasopharynx) is a tube leading into the ear (eustachian tubes). In the *roof* of the space lies the *pharyngeal tonsil,* and when *this* becomes enlarged, the growths are called adenoids. It is obvious that these growths block the posterior nostrils, so that air *cannot* pass from them to the lungs.

TONSILS.

These are masses of lymphoid tissue which lie in little recesses, between the anterior and posterior curtains or pillars, known as fauces, on each side of the throat. Normally they project a little out of the recess; they may become temporarily enlarged when inflamed, in certain septic conditions, but permanent enlargement is usually present with adenoids (or any other condition in which the nostrils are blocked), probably due to cold air being taken in by mouth breathing. If the tonsils become large enough to encroach on the breathing space a long train of evils may result.

EVIL EFFECTS OF ADENOIDS AND ENLARGED TONSILS.

To begin with, insufficient air is taken into the lungs, the blood is not properly purified and so the child becomes dull and incapable of sustained mental effort. If the enlarged tonsils (pharyngeal and faucial) are neglected, development of the chest is arrested to a certain extent, owing to incomplete expansion of the lungs. The growths are an excellent medium for germs, and septic infection through the mouth is common—especially where " comforters " (baby killers) are used. Following this we get inflamed and possibly suppurating glands, with the probable sequelæ of middle ear disease and deafness. The infection spreads from the tonsils to the pharynx and is swallowed, or inhaled into the lungs, giving rise to digestive troubles in the former or bronchial troubles in the latter case. Children with adenoids easily take cold, as these growths offer a most suitable nidus (nest) for the germs; each cold causes further inflammation of the mass and makes it larger—so we get a vicious circle, the growth predisposes to cold, every cold increases the growth. The nasal cavities become infected, and the result is a chronic nasal discharge (rhinitis). Deafness is due to (1) the eustachian tubes becoming infected, inflamed and so closed, or (2) the bulk of the mass of adenoid tissue blocks them. Many mothers do not understand the dangers of mouth breathing, and you must try to teach them in simple words.

DANGERS OF MOUTH BREATHING.

Every child who breathes through the mouth is especially liable to (1) diphtheria, (2) deafness, (3) consumption, (4) limited education (due to apathy), and possibly mental deficiency, (5) decayed teeth with the possibility of any of the diseases due to septic absorption. Adenoids mean a blocked nose. A blocked nose means improper nasal development with deformities of the palate and teeth, and I *do* want to impress upon you that the execrable "dummy" teat is responsible for a large number of adenoid cases. In most cases adenoids are formed before the child is five years old.

PREVENTION OF ADENOIDS AND ENLARGED TONSILS.

We see, then, that adenoids are due to mouth breathing, and enlarged tonsils nearly always follow. Now a baby cannot breathe through its nose if the nostrils are blocked up, can it? It is all-important to begin to train baby to breathe properly at the earliest possible age. Have you ever carefully noticed a babe at the breast and *listened* to its breathing? The nose is developed by the efforts made to breathe through it while the mouth is occupied with the nipple. Proper sucking means jaw action and nose-breathing—another important reason for preaching the doctrine of breast-feeding and for intelligent choice and care in the matter of teats in bottle feeding—short teats, tiny holes (Mellin's and Glaxo teats are both excellent patterns). A big hole in the teat means no vigorous sucking (apart from too rapid feeding), and the sucking means the proper development of the palate, etc. Remember also the possibility of infection from a dirty rubber teat, which means that the tonsils become septic and inflamed and are no longer able to perform their function. It is believed that the tonsils act as scavengers to a certain extent, being able to deal with harmful germs. Just as adenoids may be prevented by keeping the nose *clean*, so tonsils are prevented by keeping the mouth clean. It is all *so* simple, is it not, reduced to mere words? But it does need unremitting fidelity to details. Dried mucus, together with dust and germs, collects in the nostrils, and if not removed will set up chronic nasal catarrh, which predisposes to adenoids. From birth, baby's nose must be cleaned with tiny pledgets of moist absorbent wool on a probe—or a bodkin if on the district. This must be done regularly every day until the child can "blow" the nose, and it cannot do that until it is about the age of three. He may then be promoted to the dignity of a handkerchief, and if baby is blessed with a really understanding mother, perhaps a pocket to keep it in, instead of having it attached to his frock with a safety pin! The little nose will require assiduous attention for a day or two after its owner's promotion to a pocket and hanky! When a baby is asleep, if it is breathing through the mouth, the lips must be gently pressed together for a time until the habit of nose-breathing is established. The child will breathe through the nose in a few minutes unless it has a cold. If the child is falling into the habit of "mouth breathing," every morning before getting up, he should be made to take ten deep breaths through the nose and to exhale *very* slowly through the mouth. This exercise should be repeated before every meal and when he goes out for his walk. It is not a bit of use if the exercise is not done systematically and regularly; it *must* be done daily, not for two or three days and then none for a week or so. When the child knows he may not get up or have a meal until he has done his "blow balloon" game, as a little boy I know calls it, he will soon get used to it. Clean noses, nose breathing and breathing exercises, is the doctrine for you to preach constantly where there is evidence of tonsil enlargement, and even where there is not, practise of the doctrine is productive of nothing but good. Sometimes the mother is more keen if you tell her that the breathing exercise is a common one taught to singers! Most mothers, in their castles in the air, like to think of their children as possible singers

TREATMENT OF ENLARGED TONSILS AND ADENOIDS.

If a child has adenoids and enlarged tonsils to such an extent that there are certain definite symptoms, such as habitual mouth breathing, snoring in sleep, periodical sore throats, enlarged glands under the jaw, slight deafness, a nasal discharge and the typical facial appearance resulting from adenoids, then operation is imperative, the growths *must* be removed. But when operation *is* performed, it is almost useless if the mother does not do her part in teaching the child to breathe properly, conscientiously, and persistently, day in and day out, and this really requires unselfish perseverance on the part of the mother or the nurse. The mothers may tell you that the operation is no good—"Tommy Smith had his taken out and he is as bad as ever again." That is quite possible if Tommy's mother did not take proper precautions afterwards. When the mothers take their children to the out-patients' department of a children's hospital for the operation, they are always instructed to insist on nose-breathing and breathing exercises after the throat is healed. It is the surgeon's business to remove the tonsils and adenoids, but it is most important that the mother or nurse shall realise that it is *her* business to see that they do not grow again. Now I do not want you to think that *all* cases of tonsils and adenoids need operation—they do not. Where the symptoms are not very pronounced, the condition may be cured by nose-breathing, attention to the hygiene of the nose and mouth, and regular exercises. As the child grows older, the nasal cavities develop, so that there is more breathing space, and if nose-breathing is persevered in, the growths atrophy and disappear.

OPERATION FOR TONSILS AND ADENOIDS.

The child is prepared in the usual way. Half-an-ounce of castor oil is given after dinner the day before operation, and nothing to eat or drink must be given on the morning of operation. Some surgeons like the throat to be sprayed with a weak solution of Condy's fluid and the child to rinse the mouth with the lotion before going to the theatre. The following instruments must be prepared for the operation:—Mouth-gag dressed with sterile rubber tubing, tongue forceps, tongue depressor, tonsil guillotine, adenoid curettes, half-a-dozen sponge holders dressed with small "snowball" mops. The surgeon may order these to be wrung out of hazeline; this acts as a styptic. In making these mops, *do* remember that they *must* be quickly absorbent and should be about the size of a chestnut. The wool must be teased well and wrapped *loosely* in the gauze for sewing. Gauze mops are extravagant for this operation. I think it is better to place the "mops on holders" in an instrument tray where they are easily accessible by the surgeon, rather than to hand them; he works rapidly, and can pick them up more conveniently as he puts down the holder with the used mop. The child wears a mackintosh cap coming well down over the ears so that the hair does not get wet with the blood. A sterile towel is arranged over this and secured with a safety pin. After the child is anæsthetised the head is drawn over the end of the table (sometimes a sandbag is used). The nurse may be expected to press her fingers forward behind the angle of the child's jaw, so that the tonsils may be more fully gripped by the guillotine. After the operation, turn the child in the prone position so that any blood which may have collected in the mouth may escape into a receiver. The child is put to bed with the head low; there is usually vomiting of blood which has been swallowed. Fluid food is given for the first two days and the child should be made to rinse out the mouth with a weak solution of Condy's fluid after each feed. Soft food may be given on the third day. An aperient is usually given on the evening of the second day after operation. Possible complications are hæmorrhage and sepsis. If bleeding is persistent, ice compresses are applied to the throat and nape of the neck and the surgeon may swab the throat with adrenalin. Sepsis is rare, but I have known cases develop a rash two or three days after operation, very similar to that of scarlet fever, which the doctor decided was probably due to septic absorption. There was a slightly raised temperature and general malaise, but the children recovered without any particular treatment beyond suitable diet, aperients, and rest in bed. When the throat is healed, nose-breathing *must* be insisted upon; the child *can* breathe through the nose after the adenoids are removed, but as he has grown accustomed to mouth breathing, there is usually some difficulty at first. If necessary, a four-tailed jaw bandage must be worn at night, so that the mouth is kept closed while the child is asleep.

To make a Jaw Bandage.

Take 24 inches of 4-inch bandage. Tear from each end along the length to within about four inches of the middle; make a small slit in the middle piece to take in the chin; carry the two front tails to the back of the head and tie them there, then take the two back tails to the top of the head and tie them firmly there. This keeps the mouth closed.

I hope I have said enough in this lecture to make you realise your responsibility as educators of the public as to the many and far-reaching evils of mouth-breathing. It is sad to see so many little children with the pernicious dummy teat, or running about with open mouth and the dull, heavy look of the "mouth-breather," and to know that the mother is quite indifferent, because she does not understand the many evils which result from the habit. It has been said that there is no disease in early childhood which has such far-reaching evil effects as adenoids and unhealthy tonsils. Without doubt, a large number of diseases due to oral germ invasion—e.g., scarlet fever, diphtheria, cerebro-spinal meningitis, infantile paralysis, rheumatism and chorea—can be traced to a diseased condition of the nasopharynx. I am conscious of reiteration in the matter of mouth-breathing especially, in this lecture, but experience his taught me the value of repetition in pressing home an important point, and if you visualise the formidable list of diseases above, every time you see a "mouth-breather" or a pernicious "dummy teat" this teaching will not be fruitless. We can ill afford in these days of devastating war to lose the nation's greatest asset, its children, through ignorance.

LECTURE XIX.

Ophthalmia Neonatorum—The Conjunctiva—To Douche the Eye—Bathing a Baby's Eyes—Cold Compresses to the Eye—Hot Compresses to the Eye—To Apply Ointment to the Eye—First Aid Treatment of Emergencies—Burns of the Eye—Foreign Body in the Eye—Foreign Body in the Ear—Foreign Body in the Nose—Choking—Poisoning—Bruises—Dog Bite—Wasp or Bee Stings.

Ophthalmia Neonatorum.

This is a highly infectious purulent inflammation of the conjunctiva which may result in blindness if treatment is not faithfully carried out. It may be caused through infection by the maternal discharges during birth, if the eyes are not thoroughly cleansed immediately the head is born, and treated with some antiseptic if the mother is known to have a septic discharge. I think the eyes are more likely to be infected by the infant's hands, because any mucus on them is apt to be rubbed into the eyes, so that the hands should also be washed immediately after birth. The inflammation may also be caused by washing the child's eyes with the sponge that has been used for the rest of the body. This is a most dangerous thing to do; a new-born infant's eyes must be washed *separately* with pledgets of sterile wool. Any marked redness of the eyes in new-born infants must be reported *immediately* to the doctor. The disease occurs extremely rarely in our hospitals; I have known only one case occur in the maternity wards in twelve years' experience, so that you will rarely see a case until the disease is established in infants admitted from outside. About the second day the eyelids get red and puffy and a thin line of blood-stained serum escapes when the eyelids are drawn apart. The eyelids soon become very swollen, red, hot, tense and glazed, so that it is most difficult to separate them. The discharge, a thick, yellow pus, literally pours out from under the lids. If treatment is delayed or not done thoroughly, the cornea becomes ulcerated and the sloughing may be so deep that the sight is lost. To save the sight, unremitting, intelligent attention is necessary every hour of the twenty-four.

The Conjunctiva.

There is no more important nursing duty than irrigation of an eye for ophthalmia, and it is one but too often inadequately performed because of incomplete knowledge. Irrigation is ordered to cleanse *every corner* of the conjunctival sac; what too often happens is that the margins and the surface just under the eyelids are cleansed and that is all. Now the conjunctiva is the membrane beginning at the margin of the eyelid, lining it, doubling back over the eyeball, folding to line the second eyelid and terminating at its margin. If you lift the eyelid by the edge and draw it gently away from the eyeball, a small pocket is formed, this is the conjunctival sac. Now if douching is performed with the eyelids lying against the eyeball, the corners of the sacs are never reached, and, of course, the pus lies in contact with the eyeball and ulceration results. The ordinary mild irrigation with pledgets of wool is quite useless in so serious a condition as purulent ophthalmia, and syringing or douching is absolutely necessary if the sac is to be thoroughly cleansed.

To Douche the Eye.

Two nurses or a nurse and an assistant are absolutely necessary; this is a strict rule; one person *cannot* manage; it is all one person's work to keep open the lids so that every corner of the sac may be cleansed thoroughly. The following things are required:—A small douche-can fitted with about a yard of tubing to which is attached a fine glass nozzle or pipette (a fine stream only is needed), and a large tray; the warm lotion ordered—usually boracic or saline; a bowl of antiseptic lotion and swabs for preliminary swabbing if the eyelids stick, and to dry them after the douche; a jaconet dressing sheet with a circle cut out at one end, so that it fits round the baby's neck; lotions, etc., for sterilizing the nurse's and assistant's hands, rubber gloves. The nurse and assistant should wear goggles. If only one eye is infected the other must be covered by a boracic lint dressing. The nurse sits on a low chair, preferably near a fire, the baby across her lap, the head drawn to the edge of her knee with the face turned from her. The baby must be rolled in a sheet which will pinion its arms to its sides, the sheet is secured with safety pins. The jaconet dressing-sheet is secured round the neck, the loose end directed over the nurse's knee into the large tray on the floor to form a channel; the babe's cheek lies against the jaconet. The douche-can is placed on a chair (about six inches above baby's head). If the eyelids stick, swab them gently with an antiseptic mop, use the mop *once* only and throw it in the fire. Then with gloved hands the assistant opens the eyelids as gently as possible. The nurse directs the nozzle towards the inner corner so that the discharge is washed outward; the stream must flow gently, force being avoided, that is why the douche-can should not be at too great a height. The douching is continued until the sac is quite clean and usually takes 15 or 20 minutes. The doctor may order the eye to be douched first with 1.5000 corrosive sublimate solution, then with saline and finally drops of collosol argentum or argyrol to be instilled. Do be exact in the dilution of the corrosive sublimate, and take care to thoroughly wash it out; remember that what is strong enough to inhibit the growth of or destroy the gonococcus, is strong enough to destroy the fine tissue of the cornea. The eye is dried with wool and the restraining sheet removed. The arms must be secured to the baby's side with a roller towel put on binder-fashion so that the hands do not rub the eyes. The things are sterilized by boiling, the jaconet should be placed in a bowl of 1.20 carbolic lotion. You must train yourself *never* to touch your face when doing treatment for patients suffering from any infectious disease. I know a nurse who lost the sight of one eye from purulent ophthalmia contracted from a baby. A piece of boric lint should be laid on the pillow, over jaconet, under the baby's face, and this should be changed as often as necessary. The nurse must wear an overall to do the treatment and must not pick the baby up without one on. The little face is likely to rest against the apron bib, which would be a dangerous source of infection if soiled with discharge from the eye. It is possible that in the future some of you may take duty as superintendent nurses in small Unions, and I want to impress upon you the absolute necessity for allocating a special nurse with an intelligent assistant to hold the eyelids open, to a case of ophthalmia neonatorum. In small Unions with a minimum staff this will mean engaging extra help probably, but the doctor will arrange for that. No nurse can attend to these cases properly and undertake ward work as well. I once nursed a case in which the pus was welling from the eye again by the time I had finished sterilizing the things just used, so that treatment had to begin again. At the *very* least, *hourly* treatment is necessary for a few days, and as preparation of solutions, douching, sterilizing, etc., take about 35 minutes, there is not much time left after baby is fed, changed, and otherwise attended to. I tell you this because, fortunately nowadays, it is quite possible to go through your training and never see a case of ophthalmia neonatorum, and that in spite of the fact that we get the very cases in the maternity wards most likely to contract it. The Central Midwives' Board has done so much by the enforcement of its rules and punishment of every known failure to comply with them—especially the one concerning the baby's eyes, *even where no harm can be proved to follow its breach*, that ophthalmia neonatorum is becoming comparatively rare. Though the cost of extra nurses *seems* extravagant, in the end it is true economy. (A word of advice to the embryo superintendent nurse! It is always wise to use as "specials" your own *known* most reliable and intelligent nurses for such important work as the nursing of purulent ophthalmia, allocating the less exacting ward work to strangers whose reliability has to be proved.) Apart from the irreparable injury to the child of loss of sight, it costs six times more to educate, and at the best, can never have the same chances as the child who has sight. "A blind adult probably constitutes a yearly charge of £25 upon the charitable, while the State at a low estimate loses an equal amount. Directly or indirectly, therefore, a blind person implies an annual deficit of £50." I make no apology for digressing from the actual nursing of the disease for a moment. The training of a nurse must necessarily include a certain amount of teaching on the wider questions relating to public health, more particularly with regard to measures taken to guard human life from disease and injury. Those of you who have taken maternity training do not need reminding of the importance of the *prevention* of ophthalmia in the newly born, and I hope you have now no hazy ideas of the danger to the child and the cost to the State of this dreadful disease, which, until the advent of the Midwives Act, was so grievously common.

BATHING A BABY'S EYES.

A simple method of bathing a baby's eyes in case of slight inflammation is as follows:—Lay the baby across your knee, squeeze some lotion from a swab into the orbit of the affected eye, separate the lids so that the lotion washes the eye, and remove any discharge washed out with a swab. Incline the infant's head to the side so that the lotion flows in an outward direction from the eye. The eye may be irrigated by means of an Undine irrigator, which must not be held at too great a distance from the eye or the flow enters with too much force.

Cold Compresses to the Eye.

Fold a piece of lint into four. Cut half-a-dozen circles (4 ply) sufficiently large to cover the orbit, wring out of cold water, lay them on ice and apply one every three minutes in rotation. The compress is warm in that time and useless for reducing inflammation. If ice is not available the coldest water possible must be used.

Hot Compresses to the Eye.

Wring swabs of cotton wool out of water at a temperature of 120deg. F., apply to eye, cover with jaconet and change every fifteen minutes.

To apply Ointment to the Eye.

Ointment is applied to the eyelids on the end of a glass rod or silver probe. The probe should be dressed with ointment, inserted between the closed eyelids at the inner corner and drawn along in an outward direction.

FIRST AID TREATMENT OF EMERGENCIES.

Burns of the Eye.

Until the doctor's arrival, irrigate the eyes with boracic or saline solution, and drop castor oil in them. A pad of wool and a bandage or clean handkerchief should then be applied.

Foreign Body in the Eye.

In the case of the lower lid pull it downward and the grit, insect, etc., will be exposed and can be removed with the corner of a clean handkerchief or tip of a clean finger. In the case of the upper lid, pull it well over the lower lid and tell the child to look up; the lashes of the lower lid sweep the inside of the upper lid and remove the foreign body. If this does not answer, evert the lid over a probe, hairpin, match, or your forefinger. I think the easiest way to evert the lid is as follows:—Place the tip of your right forefinger over the top of the eyelid, tell the patient to look down, grasp the lashes and turn them over it, at the same time giving the tip of the finger a little downward pressure. The eyelid turns inside out like a pocket, so that usually any grit or insect may be easily seen and removed. If a sharp splinter enters the eye, drop in castor oil and send for the doctor.

Foreign Body in the Ear.

Children love to push beads, peas, etc., in their ears and nostrils. Never attempt to remove a foreign body from the ear with a hairpin or *any* sort of instrument. In the case of dried peas, syringe the ear *very gently* with methylated spirit, whisky or brandy instead of water which may be used for beads, etc. The spirit causes the pea to shrink, and it will probably float out. If a doctor is available it is much better that he should syringe the ear.

FOREIGN BODY IN THE NOSE.

Give the child a tiny sniff of pepper to make him sneeze; if this is ineffectual, send for the doctor.

CHOKING.

A child may attempt to swallow a coin or something which becomes impacted in the œsophagus or larynx, thus obstructing breathing so that he is in danger of choking. Hold the child's head under your arm, pass your forefinger right to the back of the throat and try to extract the article. This will probably cause the child to vomit and the coin, etc., may be ejected. If this fails, lay the child across your lap, head well forward and thump between the shoulder blades.

POISONING.

If it is suspected that a child has swallowed poison, send for the doctor and if possible let him know what kind of poison has been swallowed. Look at the child's mouth and smell the breath. If the mouth is stained or burned, give milk, eggs beaten up or salad oil, olive oil, linseed oil or codliver oil, whichever is handy. If there are no stains about the mouth give one teaspoonful of ipecacuanha wine every ten minutes if necessary until the child vomits, or if that is not available, give strong salt water. Give plenty of milk and beaten up eggs as well, because if an irritant poison has been swallowed these soothe the stomach and may counteract chemically the poison; in the case of narcotics generally it dilutes the poison and gives the stomach something to eject. If the child wants to go to sleep he has probably taken opium, chlorodyne, or something of a narcotic nature and *must* be kept awake. Make him walk about, slap the face, chest and buttocks with a damp towel and use every effort to prevent him from going to sleep. Give plenty of strong coffee.

BRUISES.

Apply cold compresses over the part.

DOG BITE.

If a child is bitten by a dog, always treat it as dangerous. If a limb has been bitten, tie a handkerchief above the bite, that is between it and the heart. Suck the bite well, spit out after doing so and well rinse the mouth. Wash the wound with plenty of warm water. Take the child to the doctor, who will cauterise the wound.

WASP OR BEE STINGS.

Remove the sting by pressing the hollow part of a key over the puncture, which is readily seen; dissolve a pinch of bicarbonate of soda in a teaspoonful of any kind of scent or spirit and apply this to the affected part.

LECTURE XX.

Infant Dentition (Milk Teeth)—"Teething" Troubles—The Permanent Teeth—Prevention of Dental Decay—Vaccination—Worms—Thread Worms (Treatment)—Round Worms (Treatment)—Tape Worms (Treatment)—Examining the Stool for the Worm.

INFANT DENTITION (MILK TEETH).

Babies usually begin to cut their teeth about the sixth month. The two lower central teeth (incisors or "cutting" teeth) are cut first, and before the end of the first year the four upper central incisors are through. The lower lateral incisors next make their appearance, then the upper anterior double teeth (molars or grinders), followed by the lower double teeth, so that by about twelve or fourteen months the child should have twelve teeth—six in the lower and six in the upper jaw. In the succeeding twelve months, four canines (dog teeth or eye teeth) appear, one both sides of each jaw, between the incisors and the molars; finally the posterior four molars are cut, so that by the age of two or two and a half the complete set of milk teeth should have erupted. Of course, the ages given are not absolutely the healthy limit; this varies greatly. Some children cut the complete set of teeth under two years—though this is rare—while many are well on into the third year before all the milk teeth are through. Some babies begin "teething" as early as the fifth month, whilst others do not commence until the eighth.

"TEETHING" TROUBLES.

Dentition is a natural process, and beyond "dribbling" and a little irritation of the gums there should be no symptoms to disturb the baby. Teething is likely to be a trying process for hand-fed infants and dangerous for unhealthy ones, especially those with a highly excitable nervous system. The nerves involved in teeth eruption are severely taxed during the process, and this nerve disturbance is likely to affect other nerves not strictly connected with the teeth or gums, but closely associated with them. For instance, "dribbling" occurs as the result of the increased activity of the salivary glands, and the so-called "running cold," or suffused eyes and nose with which many babies cut their teeth is due to increased activity of the lachrymal glands. Other indications of nervous disturbance are flushings, nettle-rash, and, in severe cases, convulsions. The pneumogastric nerves may be affected and this leads to disturbance of the organs which are supplied by them, e.g., disturbance of the stomach gives rise to vomiting and diarrhœa, of the lungs, to bronchitis and pneumonia, and of the heart, to fainting and syncope. These serious conditions are, of course, treated by the doctor. Sedatives are usually prescribed to quieten the nervous system, and especial care must be taken to measure these accurately. The bowels must be kept free; while a tooth is actually coming through, the infant may have frequent loose motions, and these should not be checked as they are beneficial in getting rid of the toxines which irritate the nervous system. Constipation during dentition is *dangerous*. There is often considerable local inflammation in the mouth for which lancing was formerly a popular remedy; this is, however, rarely done now because the skin often closes again over the tooth, the process producing greater irritation than before. A bone ring (which should be boiled daily) may be tied loosely round the baby's neck; he will stuff it into his mouth and will "bite" at it; the hard substance rubbing against the teeth helps them through. As early as the sixth month baby may have a smooth bone to gnaw, and after the incisors are through, a tough crust may be given with the feeds (not between). This teaches the child to masticate—a most important item of his education. One should aim at transforming sucking into true mastication, and this is done in the weaning period when the "cup and spoon" stage begins, followed by the "hand to mouth" or gnawing stage. Sleep is often interfered with during dentition; the child utters sharp little cries, turns frequently and is easily roused. Inexperienced mothers often try to pacify the infant with food, but this is a great mistake. Once let his majesty know that he will get a feed if he cries long enough, he will soon learn to rouse himself thoroughly in expectation of food every time he half wakes. Feeding at night is bad for a baby of this age. The stomach does not get proper rest and the appetite by day is impaired. A baby should *never* be given "soothing" powders, syrups or patent medicine of any kind. These are most dangerous, because without exception they contain strong and injurious drugs which must never be given except by a doctor's order. The mother will tell you that Blank's soothing syrup relieves the baby and sends it to sleep, so that she can get through her work. There is no doubt about the syrup sending the baby to sleep, but there is the very grave risk that it may be the sleep from which there is no awakening!

THE PERMANENT TEETH.

The permanent teeth gradually replace the milk teeth. They erupt in nearly the same order between the seventh and twelfth years, excepting the four last molars (wisdom teeth), which do not appear until between the seventeenth and twenty-fourth years. There are thirty-two permanent teeth, twelve more than in the set of milk teeth; this is because the jaws widen, thus making more room. The permanent set is as follows—in the upper and lower jaw respectively:—Six molars (three on each side), four bicuspids or two points (two on each side), two canine (one on each side), and four central incisors—16. While the second teeth are coming, the child should be taken to the dentist at least once in every six months, because the milk teeth may require extracting so that the permanent ones can grow straight. Occasionally some of the new teeth need extracting in order to make room for the others to develop properly.

PREVENTION OF DENTAL DECAY.

Children should be made to clean the teeth after food with a *soft* toothbrush having bristles of unequal length, and a simple dentifrice. Camphorated chalk is the best. Cheap carbolic tooth powder should not be used, it irritates the gums. Ordinary "whitening" makes a good and simple dentifrice. The tooth brush must be cleaned after use and placed outside on a window sill in a draughty place where it can dry. It should *not* be put in a warm drawer or brush and comb bag which offer ideal conditions for the breeding of microbes. In hospital the name of the owner should be plainly marked on every toothbrush.

The following are sound dental maxims :—

(1) Go to bed with a clean mouth.

(2) Do not give a child food the last thing at night after rinsing out the mouth.

(3) Bad teeth poison the body and cause a bad complexion.

(4) Chew well. (Eating an apple, pear or celery acts as a sort of natural toothbrush.)

(5) Food well chewed is half digested.

(6) Children should pay a visit to the dentist not less often than once in six months.

VACCINATION.

As trained nurses you will often be asked what you think of vaccination. On the District it is wise to taboo controversy on politics and religion, and after working in an "anti-vaccination" town I am inclined to add a third subject—the ethics of vaccination! But in this progressive age we sometimes take retrogressive steps, and exemption from vaccination for infants of "conscientious objectors" is an instance of our backsliding. It is therefore necessary that you should have some knowledge which will prove useful "powder" when occasions for battle arise. Vaccination affords immunity from small-pox, or greatly modifies an attack of the disease. In the 18th century Edward Jenner discovered that dairymaids invariably escaped small-pox in severe epidemics, and he attributed this to the fact that they all had cow-pox which they acquired from the cows through abrasions on their hands or arms. In 1796 he inoculated his first case with the virus taken straight from a pustule of a cow suffering from cow-pox or vaccinia ; to this form of inoculation he gave the name of vaccination. Inoculation proved so successful as a prophylactic that in many parts of the world it became compulsory that all infants should be vaccinated, and it is only in recent years that the law has been relaxed. Vaccination is said to confer immunity for 10 or 12 years, so that children should be re-vaccinated between the ages of 10 and 15 or in the event of an outbreak of small-pox—if the disease is contracted by a recently vaccinated person, it is only in a mild form. Formerly the "arm-to-arm" method was used, and this undoubtedly led to considerable prejudice against vaccination, because unless rigid antiseptic precautions were observed, other germs as well as those of vaccinia were inoculated. Glycerinated calf-lymph is now provided by the Local Government Board ; this is clear serum drawn from the primary vesicle of a calf which has been inoculated, so that the risk of mixed infection is practically nil. Babies are thus inoculated with the disease after it has been diluted, as it were, by being passed through the body of a calf. Glycerine destroys deleterious germs, e.g., the germ of erysipelas is said to be unable to withstand exposure to a 50 per cent. solution of glycerine. The following statistics of a small-pox hospital taken from Watson's "Handbook for Nurses" are instructive :—

Mortality of those previously vaccinated...........	6.5 per cent.
Mortality of those with *good* vaccination marks...	2.5 per cent.
Mortality of those unvaccinated	37 per cent.

Mothers sometimes tell you that baby had "a proper bad arm," and I knew one young mother who hesitated between relief and anxiety because her baby had not a bad arm and was "quite good" with it. Now it is quite an erroneous idea to suppose that a babe must have a bad ulcerated arm as evidence of successful vaccination. The operation is accomplished by *just* scratching through the epidermis or *top* layer of skin with a lancet and introducing the virus on the point of the knife or edge of the sterile tube which contains it and which is broken at the time of operation. The arm should be washed with soap and water and swabbed with an antiseptic which must be washed off with sterile water, before being scarified. After the operation, the lymph must be allowed to dry before the dressing is applied. Surgeons differ in their dressing; some prefer gauze, others lint, and on the district a favourite treatment is boric powder and scorched linen. The arm must be kept *dry* and *clean*, and *friction* must be avoided, so that it is important to see that the dressing is securely fixed. Strapping is sometimes used, but I do not like it for a baby's delicate skin; tape is better. Attach a double tape to one side of a square 3 by 3 of the dressing chosen (folded gauze or single lint), and a single tape to two sides; the double tapes tie round the infant's neck and the other two round the arm; secured thus, the dressing cannot slip or rub. If vaccination is successful, about the fourth day a small inflamed spot appears; this increases in size, and about the sixth or seventh day vesication or blistering occurs—but *ulceration* is entirely out of place. About this time the constitutional effects appear. Baby is irritable and loses his appetite, but in a day or two these symptoms disappear. From the tenth to twelfth day the inflammation is at its worst, after which it subsides. The fluid dries up and leaves a dark brown scab; this should be left alone and allowed to drop off; the scab acts as a protection to the new skin forming underneath. It is a good plan to have a babe vaccinated when quite young, say a few days old, he moves about less then. Vaccination should not be performed during teething, if the child is out of sorts, or if he has any skin eruption. In hospital special gowns without the left sleeve are kept for babes who have been vaccinated. The law requires a child to be vaccinated within six months of birth, and if it is unsuccessful the operation must be performed again. Vaccination may be performed by the Public Vaccinator, in which case there is no fee, or by a private doctor. After the Public Vaccinator personally ascertains that vaccination is successful he sends a certificate to that effect to the Vaccination Officer of the district. If a private practitioner vaccinates he hands to the parent a certificate of successful vaccination, which must be sent to the Vaccination Officer within seven days of inspection of the child's arm. The general rule is relaxed if the doctor is of opinion that the infant is not in a condition to be successfully vaccinated, and he will give a certificate to this effect which holds good for two months, after which it must be renewed.

An "exemption" certificate must be applied for within four months of birth on the grounds of "conscientious objection." It is a trained nurse's duty to endeavour to overcome "conscientious objections."

WORMS.

The most common parasites found in the intestines in childhood are thread-worms, round worms and tape-worms.

THREAD WORMS.

Thread-worms are so called because they resemble little bits of cotton. They infest the large intestine and the rectum, and give rise to intolerable itching at the anus; in girls the parasites may pass into the vagina, where the resulting irritation gives rise to a vaginitis, and in both sexes thread-worms may reflexly cause enuresis. The thread-worms are found in great numbers in the stools.

TREATMENT.

The doctor prescribes treatment. Usually, santonin with castor-oil is given internally at night, followed by enemata in the morning. Soap and water, salt and water—two to four drachms to a pint according to age—or infusion of quassia, which is a very efficient remedy, may be ordered. It is a good plan to add half a teaspoonful of bicarbonate of soda to each pint of the saline solution. The parts must be kept scrupulously clean and should be sponged with 1-60 carbolic lotion.

ROUND WORMS.

These and thread-worms are the most common in children. In appearance the round worm is cylindrical in shape, tapering at both ends, the head end being slightly larger than the other. The worm is from 10 to 15 inches long and yellowish brown in colour; they are passed in the stool, and it is said that the child may vomit them. Round worms and tape-worms may give rise to certain nervous symptoms such as convulsions, grinding of the teeth, itching of the anus and the nose, so that the child "picks the nose." There may be griping pains, ravenous appetite associated with emaciation, nausea and vomiting.

TREATMENT.

The child is usually placed on light or semi-starvation diet for a day. In the evening a large dose of castor-oil is given—the quantity depends on the age of the child. In the morning santonin is given with castor-oil, and after the bowel is cleared, some doctors order bowel lavage with soap and water or barley water. The child should be kept warm in bed. The anthelmintic (drug for expelling worms) often makes children very poorly, and I have known a child quite collapsed after santonin. This drug may cause "yellow vision," and for that reason it is sometimes ordered to be given at night.

TAPE WORMS.

These are not so common in children as thread-worms and round worms. They are said to be introduced into the intestine with meat, more especially pork which has been insufficiently cooked. The symptoms are somewhat similar to those caused by round worms, but in both cases they vary; there may be no symptoms and the child appear to be fairly healthy, the first indication of the presence of tape-worm being the passage of segments from the bowel. The segments are oblong, white tape-like bodies which are passed singly or attached together in chain-like formation. Where the whole worm is passed, it may be several yards in length. When treatment is given to expel the worm it is most necessary to preserve it intact, so that you may ascertain whether or not the head with its hooklets has come away. If the head is not expelled the worm will grow again within three months; it is very tiny, about the size of a small pin's head, with a slender neck like a delicate thread, so that it is easily overlooked.

TREATMENT.

The child is kept fasting for at least 18 hours—from 2 p.m. one day until 8 a.m. the next, except for bovril, gelatine or similar foods which leave no debris. An aperient (not castor-oil) is given overnight, the object being to thoroughly clear the bowel of mucous and food, so that the drug ordered can come in contact with the head which is fixed to the intestine. For this reason, saline aperients, e.g., Mist: Alba or Mag: sulph, etc., which dissolve the mucous, are usually prescribed. The anthelmintic most commonly used is extract of male fern, which is conveniently dispensed in ricepaper cachets. These are moistened and swallowed with a drink of water. After the bowels have acted, another aperient is given in order to expel the worm. These children must be kept warm in bed with hot bottles. The treatment is drastic in order to cause detachment of the head of the worm from the wall of the bowel.

EXAMINING THE STOOL FOR THE WORM.

The child should pass the evacuation into a vessel containing water of the body temperature, as this will facilitate the search for the head of the worm. It is said that if the expelled portion of the tape worm comes in contact with a cold object, it contracts so vigorously that it breaks itself asunder, so that part is left unexpelled. Pour clean cold water over the evacuation and allow it to stand ten minutes, then pour water away. Do this again and again until the water is scarcely coloured. Strain carefully through coarse muslin, transfer the worm, coil by coil, to clean cold water, and search for the head among the segments and fragments remaining in the muslin. If the head is not found one can only wait for three months, when if no more segments are expelled, the head has probably been discharged and not found.

LECTURE XXI.

The Private Nurse—Nurse's Dress—Nurse's Attitude to the Patient—Nurse's Attitude to Patient's Relatives—Nurse's Attitude to the Doctor—Nurse's Attitude to Servants—Sister's Duties in Children's Ward—Routine Work in the Children's Ward—Feeding—Amusements—Clothing—Religious Teaching of the Children.

In these last lectures I wish to make some suggestions which are the outcome of my own experience, and which I think may prove helpful to nurses who intend to take duty as private nurse, sister of children's ward, or health visitor.

THE PRIVATE NURSE.

The private nurse works under conditions that make the work particularly wearing, for she lives in homes thrown out of gear by the exigency of sickness; her sleep is disturbed and she probably lives in an atmosphere tense with the more or less restrained emotions of anxiety and fear. The hospital or district nurse, on the other hand, is fairly sure of regular meal hours, rest hours, etc. The private nurse is constantly confronted with the problem of adapting herself to new personalities and a fresh environment in every case, and the problem is a specially difficult one in the case of a small child. It may be possible to suggest to you how to avoid common complications that arise, but you will meet with many small difficulties which only wide sympathy and sincerity of purpose can overcome smoothly. In connection with the nursing of sick children in private practice, to a certain type of woman, particularly one who loves and understands them, there is unfailing interest in this life of constant change and re-adjustment, but I want to say with emphasis, that no nurse who does not love children or is inexperienced in their management in illness, should undertake the nursing of them in private practice. The whole nursing profession is judged by the private nurse, and I have found that mothers of sick children who employ nurses are the most severe judges, which is natural, because of the peculiar quality of their love. In private nursing, especially in infectious cases, certain duties fall to the nurse which are not actual nursing, but which it is necessary for the welfare of the patient and the rest of the household that the nurse should do. It is common experience that the better bred the woman, the less does she consider it beneath her dignity to do certain menial duties. If you look upon a duty as menial, it *will* be menial in your hands. It is necessary in the case of a patient suffering from infectious disease, or in a house where there is only one servant, or perhaps none, for the nurse to sweep and dust the sick-room, etc., and this can be done without the least loss of dignity, indeed with very definite pleasure in the knowledge that you are helping. You will often find yourself overwhelmed with gratitude and will be touched and humbled by the generous appreciation shown for small labours which were obviously your duty, though not, perhaps, strictly nursing duty. After all, the opportunity of serving others, especially in the house disorganised by sickness, is a great privilege and will quite certainly be your aim if the root of the matter is within you.

NURSES' DRESS.

Personally, I object to uniform for children's sick nurses, except where the child is accustomed to it with its own "nana." If you are attached to a private nursing institution you have no choice, though I think exceptions could be made to the rule of uniform being worn always on duty, with advantage to the patient. Some of the better-class nurses' Co-operations do this now, particularly in the case of mental or children's nursing, and friends occasionally request that a nurse wear mufti. A cap and strings make a small sick child nervous; the more like "mother" a nurse looks, the more she will appeal to the little one's imagination. A clean washing frock, one of Liberty's flower-sprigged fabrics for choice—you know how little fingers pick out the tiny posy or spray of fruit—made *quite* simply, with soft muslin collar and cuffs, and an apron to put on for protection when bathing, etc., hair glossy, and neatly—which need not mean unbecomingly—arranged, go a long way towards making a sensitive child at ease with a stranger. Never forget that children love pretty things. *En passant*, I want to warn you against using scents in a sick-room; they may be pleasing to you personally, though it is always better form to use only a faint suggestion of any perfume, because one should never be an infliction on others. So many people dislike unnecessary odours, and sick people, especially children, are often nauseated by them. To this day eau de Cologne is associated with chloroform sickness in my mind, and lavender water with measles. A woman who is physically fit, sweet and fresh from baths and proper exercise, whose teeth, hair and hands show scrupulous attention, needs nothing further to make her attractive to a sick person.

NURSE'S ATTITUDE TO THE PATIENT.

Your first appearance in a house is always more or less trying, but far more so to the patient and friends than to you probably. It may be that at first the child will not let his mother or nurse leave him and will perhaps not allow you to go near him. All you can do is to wait; do not thrust yourself on the child. Win the mother's confidence, listen to the history of the illness, the child's little habits, and soon he will probably allow you to do some service, sponging with hot water, or giving a drink, then all will be well. Do not begin rearranging the bed or room in a flurry; just quietly take your bearings; make no show of authority, find out where things are kept, use your eyes, do not worry the friends for every little thing, and in a few hours you will have the whole situation in your hands. The more unostentatiously you do things, the more certainly will the household realise your command of the situation.

NURSE'S ATTITUDE TO PATIENT'S RELATIVES.

It is a matter for regret that so many trained nurses appear indifferent to the feelings of their patient's relatives and friends, and this is a really serious drawback in the case of the parents of a sick child. There is *no* mental suffering so acute as that of a mother's over-wrought anxiety for her child, and she certainly needs quite as much consideration as the patient. I want especially to impress upon you to allow the mother to do any little nursing duty possible, particularly for a dying child. If the little one wants to be taken on to its mother's lap, permit that; the mother will remember it for years after and will find her arms less empty, just as the fact that you deprived her of that tangible comfort for which her heart was yearning—because you thought it better nursing for the child not to be lifted from bed—will sadden the desolate years to follow and will haunt her with regret for something left undone. Of course, parents and friends often suggest impossible remedies, but these must never be met with anything but courtesy. Remember how you would like your parents to be treated. Again, very good suggestions may be made, based on sound common-sense; adopt them and show those who suggested them your grateful appreciation for them. Of course, no gentlewoman will cast reflections on the amateur nursing which preceded hers, nor on that of a nurse who may have had charge of the case previously. Where there is obviously great diversity of methods you can always suggest that the same result may be obtained differently, and that various schools differ in instruction.

Nurse's Attitude to the Doctor.

To a great extent hospital etiquette is applicable in private practice. Dressings, etc., must be ready, the room tidy, and if possible the patient prepared, but *do* remember that in private nursing there are no laws such as those of the Medes and Persians. If the patient does not wish to be disturbed from a comfortable position to be washed for the doctor's visit, there is no sensible reason why he should be. It is foolish, when a doctor's visits are irregular, to keep the patient waiting for his bath, for example, because the doctor may come in the midst of it; you can often plan things with a little care, but the *patient* is the first and most important consideration. After you have given your report, outside the bedroom, and answered any questions, avoid remaining for unnecessary conversation; the fact that doctor and nurse talk a long time makes the relatives nervous. If difficulties arise and the child's condition gives you anxiety, do not ask alarming questions over the telephone, such thoughtlessness frightens the parents, often unnecessarily. You can always send a note. You will almost certainly be questioned as to the doctor's ability, and occasions may arise when you will find yourself hard pressed for a reply, especially when an over-anxious mother questions you as to the advisability of calling in a specialist. Your course is quite clear and admits of no deviation—*absolute* loyalty to your doctor, and with regard to the specialist you can always say that if the doctor thinks further advice necessary he will suggest a specialist. It may be advisable to mention the parents' desire to the doctor and so give him the opportunity of conforming to it or reassuring them. In private practice you will see methods which may be strange to you, and I want to remind you that there are many ways of attaining the same object, few of which you know yet.

Nurse's Attitude to Servants.

It may fall to your lot to nurse a child in a family where there is a valued children's nurse. Now " nana " is a person to be propitiated by every means in your power; she can give you valuable help with regard to the child's likes and dislikes. You will know exactly how to approach "nannie" if you try to think how she must feel to stand aside for a "trained" nurse, perhaps much younger than herself, to take charge of a little child whom she may have had from infancy. Besides, the other servants will probably take their cue from "nana." I can assure you that your attitude to the servants of a household will greatly influence the comfort of the whole family. You must be sympathetic and helpful, but there are two kinds of sympathy, and it is the encouraging kind you must show, not the condoling, which makes the maids look upon themselves as objects to be pitied. I cannot speak too strongly on the dangers of familiarity; kindness, thoughtfulness, courtesy, are most desirable, but never familiarity. Again, nothing exasperates servants more than the manner of a nurse who shows that she *expects* to be waited upon; take necessary service simply and naturally; *orders* should be given in the name of the mistress of the house, the nurse should make *requests*. Sometimes one meets upper servants of marked capability who practically run the house, and they especially may resent the trained nurse, often with very good cause, if half one hears of the overbearing arrogance and selfishness of the latter be true. Your natural professional instincts, used as you are to command, will probably be to repress her, and this will certainly result in friction. It is well to remember that the maid would not be in such a responsible position unless she possessed good qualities. A tactful woman bent on making things run smoothly will soon find a way to approach her. Ask her advice about any new arrangement for the well-being of the patient, go to her for clean linen, volunteer some remark about the patient's progress, and you will convert one who might be a formidable antagonist into a willing and helpful ally.

Sister's Duties in Children's Ward.

It is a curious thing that the post most difficult to fill suitably in our hospitals is that of sister of the children's ward, and I think the reason is that the teaching of children's nursing given in general training is not "specialised" enough, so that women who really like work among children feel that they do not know sufficient to undertake the responsibility of a sister in the children's ward. Now, if you want to remain young and to keep your wings which you came from Heaven with, the children's ward of a Poor-Law Infirmary offers you ample opportunity. Abundance of love, first quality, is there for the taking. All your perceptions grow clear and finely pointed, and above all, you are working with the constant satisfaction that comes to those who build. I shall touch very briefly on some points essential to the proper management of a children's ward, which may be helpful to young nurses—older ones have discovered them and many others for themselves. Now, efficient management of a children's ward means carefully planned routine; it is impossible to apply haphazard methods of administration in this ward above all. An incompetent ward manager may "worry" through the work of other wards but the charge nurse of the children's ward must plan and know every detail of the work, from the boiling of the bottles, teats and face-gloves, to the preparation of every diet. She must know the limitations of every nurse—which one will be likely to bath without a thermometer or leave a three months' babe with a bottle of food; she must know and appreciate the sensitive temperament of the junior probationer dreading the first painful dressing of a bone operation, for example, and just how and when to say that which will strengthen her. A capable sister is able to recite any prescribed diet for a given age without a moment's hesitation, or to answer the doctor's questions about a patient without reference to her staff nurse. The ideal children's sister knows perfectly the bairns' homesickness after visiting hours, the desperate counting up of the days until mother or daddy shall come again, and she does'nt in the least mind crumpled cap strings after the passionate embrace of the child with hungry heart. And the Poor-Law Service numbers many such women, only, unfortunately, they are not "nursed" for the position, that is, sent on at the conclusion of their training to a good children's hospital, preparatory to taking duty as children's sister in our own hospitals. Although the work is entirely different, the knowledge gained gives one confidence in the event of certain emergencies.

ROUTINE WORK IN THE CHILDREN'S WARD.

This varies in different hospitals. In Poor-Law hospitals we have no visiting staff so that our morning's work does not wait on the irregular hours of Honoraries. First, let me say emphatically, that if you intend your patients to be well nursed and the work thoroughly done, you *must* see for yourself that it is done, and must *not* pass over things left undone. It is no use telling the average new probationer that bottles are to be refilled as often as necessary with water at a temperature of 130 deg. F., and placed, properly protected, at baby's feet, *not* half-a-yard off at the foot of the cot; you must systematically see for yourself that all bottles *are* warm and *against* baby's feet. Young nurses may be very reliable, but unfortunately every staff has those who need constant supervision, and the knowledge that sister *does* supervise is an excellent deterrent to slackness. When you are familiar with every detail of ward work, dressings, etc.; make your time-table and list of duties, and see that they are strictly adhered to. Each nurse must know her work and what she is expected to do in the "off duty" time of other nurses—this is important. The sister's first morning round includes inspection of lavatories, stores, linen bins, lockers, medicine cupboards, and should finish in the kitchen, where bottles, teats, steriliser, milk tins and saucepans demand close attention. The sister will, of course, be skilled in the technique of hand-feeding and this should be her special care; nurses are soon impressed with the importance of work which sister does not delegate to others. Preparation of the milk diets and sterilisation should be made the subject of practical demonstration until every nurse is thoroughly familiar with the process and the reasons for it. The probationers must be taught that apart from nursing the children they take an important part in training and developing them. You must have regular times for attending to the needs of the children; screen time may be at ten, two and six o'clock, but quite young children may be taught to sit up or call for nurse if they want the bedpan between hours. At "screen time" the nurses should "hold out" the babies as a routine duty; the number of soiled napkins will steadily diminish if this is persevered with. The rule of a hand-glove and clean towel for each child is one that you must insist upon being strictly observed. Hand gloves made of turkish towelling, lint, or swansdown can be boiled, and are sanitary. After dinner each child is "chambered" and sponged, and those who are up laid in their cot and covered with a blanket; the blinds are drawn and the ward should be kept absolutely quiet for two hours. Sleep is very necessary for children, and if the older ones do not sleep an enforced "silence" hour is good for them. Unfortunately, in Poor-Law, our children's wards are still in the hospital proper, except in rare cases, and the afternoon rest is a boon to adult patients in other wards. Where the staffing permits, the children should always be supervised at play in the day room or garden; by supervision I do not mean interference; the nurse can darn the children's socks and must be trained to understand that the making of mud pies is one of the permissible culinary diversions of childhood and is *not* naughty, also that clean pinafores are made to be dirtied! Grubby hands and faces in the garden or airing courts are quite normal, but I want to remind you that little tots of two years, say, must not be allowed to crawl on the ward floors and make their hands dirty. Little hands go to baby's mouth, and the sort of dust found on a ward floor is not exactly the thing to be introduced into baby's mouth.

FEEDING.

I have spoken of the preparation and service of food in a previous lecture, and shall only speak here of the sister's duty in the training of probationers as to their responsibility for the inculcation of good manners in the children under their care. The children should be taught to say a simple grace before and after meals, which they can say in their own homes, such as "For what we are about to receive, Lord make us truly thankful," and "For what we have received," etc. The singing of the hymn "Praise God from whom all blessings flow," in vogue in some hospitals is too institutional, and is surely rather a tantalising preliminary to a hungry boy, because of its length. Each child needs teaching the correct way to eat food, and the nurse *must* insist on proper mastication. At table, greediness and selfishness must be repressed from the moment the children can understand that they may have sufficient food and no more, and that their smaller neighbours at the table need attention first. Children in bed must be arranged comfortably and fed by the nurse when necessary. Water should be given in abundance *between* meals, a convenient time being before lunch and the afternoon sleep. The great thing to bear in mind is that repetition, repetition, and the use of an influence over and over again, will, in the end, irrevocably fix those traits in the child's mind so necessary to selfrespect—you will not weary because you are doing your important share in the training of "the priceless soul of a child." And the more you accept your responsibility the more you will realise and enjoy it.

AMUSEMENTS.

There is some sort of diffident feeling in hospital, difficult to describe, against nurses amusing the children. I have known nurses look positively guilty when I find half-a-dozen new miniature probationers resplendent in paper caps, cuffs and aprons, strutting about the day-room. "Let's pretend" is the most delightful game in the world, so enchanting indeed that grown-ups often play it, only they do not tell. Perhaps you feel that you are wasting time,

LECTURE XXII.

Infant Health Visiting—Infantile Mortality—Notification of Births Act (Extension, September 1st, 1915)—Duties of an Infant Health Visitor—Infant Consultations—Home Visiting—Special Knowledge Necessary for Infant Health Visitors—Practical Details in Home Visiting—Feeding—Clothing—Hygiene—Drugs—Visits.

INFANT HEALTH VISITING.

An increasing number of women trained in our Service Hospitals is taking up health visiting. The popularity of this branch of work is probably due to the greater freedom, absence of discipline, and the fact that evenings and week-ends are at the Visitors' own disposal. One must deplore, however, the frequent appointment of women, unfitted by any special training, to these important positions. Possession of the Central Midwives' Board and sanitary certificates, though desirable and valuable assets, is not to be compared with the experience to be gained in the children's ward of a Poor-Law Infirmary, combined with training in district work as a Queen's nurse, or visiting done under skilled supervision in towns such as Manchester, Bradford or Birmingham, where health visiting is efficiently organised and carried out. Those of you who intend to specialise as infant health visitors—which frequently includes inspection of midwives—will be well advised to qualify as Queen's nurses. The post-graduate course of instruction given to Queen's nurses includes lectures on social subjects, hygiene, and special preparation for tuberculosis work. Nurses who take the hygiene course are eligible as candidates for the examination of the Royal Sanitary Institute for Health Visitors, and as for general health visitors the certificate is a *sine qua non*, it is advisable to obtain it. An alternative course is to secure an appointment in a large town employing a staff of health visitors under a Superintendent Inspector. If the Medical Officer of Health happens to be an enthusiast on the subject of infant welfare, the more efficient is your training likely to be. Many nurses have hazy ideas as to what is actually required of an infant health visitor, so that it may be helpful to give a brief outline of the object of the work before speaking of the personal qualifications desirable.

INFANTILE MORTALITY.

This term means the annual number of deaths of infants under one year of age occurring among every thousand infants born during the same period. "Up to the year 1900, while the *general* death-rate had been steadily declining in the preceding sixty years, the number of infants who died remained practically the same." "The infantile death-rate for England and Wales in the ten years 1841-1850 was 150; in the ten years 1891-1900 it was still 153. In London the rate was nearer 160 throughout the whole period." With the advent of the new century, however, there was marked improvement in the death-rate, and in the five years 1906-1910 the rate stood at 117. Contributory causes of this desirable decrease would be the cool summers and increased prosperity of the people; but undoubtedly the recognition by health authorities, that there is no more valuable national service than the work of taking proper care of babies and prospective mothers, which led to the Notification of Births Act, and consequent employment of infant health visitors, helped materially to reduce the infantile death-rate. A more far-reaching result, perhaps, is the undoubtedly improved health of the survivors. Statistics are always dry reading, but apropos of this subject, certain figures just published in the quarterly return of the Registrar-General are instructive though deplorable. For the County of London the number of deaths of children under one year was 172 during the week ending August 7th, 1915, against 156 in the corresponding week of 1914. This is an alarming loss of child life in this period of the nation's history, and a contributing cause is without doubt the dearth of doctors and nurses available for public health work owing to the war. (The present *birth*-rate is 23 per thousand, it used to be 30.)

NOTIFICATION OF BIRTHS ACT (EXTENSION, SEPTEMBER 1ST, 1915).

The Notification of Births Act, until recently partial and permissive, is now extended so that it is universal and compulsory, with certain exceptions, throughout the United Kingdom. The Act is a most valuable and far-reaching measure. It provides that in the case of every child born, the father, and any person in attendance on the mother (doctor or midwife), shall notify the birth in writing, to the Medical Officer of Health for the district, posting the notification within six hours of the birth—or a written notice may be delivered by hand within 36 hours after the birth. Stamped, addressed postcards are supplied, free of charge, to doctors and midwives. Penalties are inflicted for failure to notify a birth. By the extension of the Act, provision is made for the county councils, sanitary or other authorities, to take steps to secure the welfare of mothers and babes where necessary. The local supervising authorities under the Midwives Act, i.e., county councils and county boroughs, who are also responsible for visiting in connection with tuberculosis, have been asked by the Local Government Board to organise the work of the extended Notification of Births Act, since they already have the entrée to the people's homes. This certainly tends to economy and unification of home visiting for a number of different purposes, but it is by no means an ideal arrangement. The Local Government Board are prepared to consider any scheme which may be organised for maternity and child welfare for any particular county as a whole—such as maternity centres where medical advice and treatment are available for mothers and expectant mothers, and children ailing or well. The Government will make a grant of half the entire cost for schemes approved by the Local Government Board.

DUTIES OF AN INFANT HEALTH VISITOR.

The duties of the "Baby inspector," as the health visitor employed under the Notification of Births Act is popularly designated, usually include home visiting, attendance at infant consultations, and the holding of classes in various subjects connected with mother-craft, such as feeding, washing and dressing of the infant, home nursing, etc.

INFANT CONSULTATIONS.

These are held weekly or bi-weekly at a central depôt, variously termed "School for mothers," "Babies' welcome," etc. A doctor usually attends and has the assistance of the health visitors of the respective districts. Babies are weighed weekly or fortnightly, and careful records of their weights and physical conditions are kept. Personal advice of a definite educative character as to hygiene, feeding, clothing, and general care of the infant, is given to each mother. Ailing babies are referred to the doctor, who prescribes for them free of charge.

HOME VISITING.

This is the most important, and certainly the most difficult, part of the health visitor's work, and success depends as much upon the personality of the visitor, as upon her expert knowledge and ability to impart it. There is a very definite psychology about health visiting, and it is of the utmost importance that the visitor should recognise this aspect of her work. The spirit in which you approach this part of your work is the thing that matters—either you start out every morning to make a round of visits, in many cases unwelcome, to dingy houses in mean streets; or you set forth with the magic feeling that you hold the key of adventure, because home visiting is really a great adventure among numerous personalities. I strongly advise you to cultivate the latter attitude. Health visiting is practically teaching—of an unusual kind—carried out under difficulties. You have to impart knowledge, not to the receptive child mind, but to the adult mind, more often than not brimming over with ignorant traditions and superstitions which must be dispelled. Often the mother is eager to learn; occasionally, to put it mildly, she is extremely unwilling; and sometimes, poor soul, she is utterly indifferent with the apathy of poverty and despair or sloth. Before you enter the house you have no idea as to the particular problem which will confront you, nor how you will deal with it. You will be sure to be nervous, especially at first. The right kind of visitor must be sensitive to do the work well and is sure to feel some diffidence in going into a stranger's house where she is not sure of a welcome. Whatever you do, try not to show shyness—probably the mother is just as shy, and two shy people together have a paralysing effect on one another. If you appear self-possessed, and interested in baby, the mother will soon feel at ease, and then the battle is won. Your aim is to leave the mother with the feeling that in you she has someone expert in all details of mother-craft, to whom she can appeal when in doubt. And nothing will accomplish this desirable relationship but the force of your personality re-acting upon hers. Do not be discouraged when you leave a house with a feeling of failure. Just because you *are* you and not someone else, certain people will be "stone walls" to you, but the keener your intuitive understanding and the more faith in and love for the brave women of the poorer class you have, the greater number you will eventually reach. Without doubt, health visiting is amazingly difficult, but I have no hesitation in saying from personal experience that it is one of the most interesting branches of our profession. Every health visitor makes mistakes, all find different problems, and I can only tell you of those which were peculiarly mine. If possible, the infant visitor visits the mother and babe some time during the first month, as soon after the tenth day as possible. You will probably be a welcome visitor, particularly to a young mother thrown on her own resources, too often limited, alas, to the advice of neighbours as ignorant as herself. I believe in some towns the first visit is made while the midwife is attending, particularly where the infant visitor is also inspector of midwives. This is not desirable. Most midwives now-a-days have passed the examination of the Central Midwives' Board, and that premises practical knowledge of the care and feeding of the infant. The midwife not unnaturally resents the visit of the baby inspector, whom she may look upon as a trespasser on her preserves, and can do a great deal to prejudice the mother against her. On the other hand, I have known the midwife prepare the way for the visitor by saying, "You will be having the lady inspector to see baby, ask her about anything you want to know, she is an expert on babies." This is most helpful and shows why it is impolitic for the duties of midwifery inspector to be undertaken by the infant visitor, though it is difficult to arrange otherwise in towns where the number of health visitors is limited.

Special Knowledge necessary for Infant Health Visitors.

As health visitors, it is understood that you have the necessary equipment of scientific knowledge with regard to infant hygiene, feeding, etc.; but what I particularly wish to discuss now is the general all-round knowledge which is necessary for home visiting. Until you actually begin the work you will not recognise your limitations. I should say that most trained nurses find their greatest drawback to be ignorance of *normal* infancy and childhood. I discovered my ignorance of *normal* infancy in my first interview—normal small children I understood fairly well, but a normal babe was absolutely the unknown quantity! Look round among your acquaintances for the most covetable babies possible and study them closely. You will find this detailed study very helpful in dealing with babies generally. The study of normal babyhood is comparatively new, and so far as I know there is very little literature on the subject. A sanitary certificate is not indispensable to success as a baby visitor, but you must know the elements of house sanitation and the object of public health administration, so that you may know which defects, remediable under the Public Health Act, should be reported to the medical officer of health. "Health of the State," by Sir George Newman (published by Headley, 1s.), will give you all necessary information about this branch of the work. Infant visitors usually work in connection with the public health department of the town or borough councils, so it is desirable that you should have some knowledge of the scope of public health department work, and for this you will find "The Social Worker's Guide," by the Rev. J. B. Haldane (published by Pitman, 3s. 6d.), most useful. As infant inspector, for good all-round information, I found invaluable the Report of the Proceedings of the National Conference on Infantile Mortality, 1906, published by King & Son, Orchard House, Westminster, 1s. 6d. The Report includes papers by experts on such subjects as Infant Life Insurance, Pure Milk Supply, Infant Mortality and Life Insurance, Chemistry of Infant

Foods, Teaching in Schools of Elementary Infant Hygiene in reference to the rearing of Infants, and kindred subjects of enthralling interest to the enthusiastic baby visitor. The Report gives just the information you require on everything of importance connected with infant welfare, and will be found a most valuable handbook on the subject. Read in conjunction with the "Forty-third Annual Report of the Local Government Board, 1913-1914," which contains the third report on Infant Mortality (price 1s. 2½d. from any bookseller), the rapid growth of work in connection with preservation of infant life, and the gratifying results following the adoption of suggestions then put forward tentatively, will give you encouragement in those pessimistic moments which come, even to the most determined optimist. In addition to these books, which should be in every health visitor's possession, the following will prove most helpful in giving you ideas:—"A Montessori Mother," by Fisher, published by Constable, London; this will give you some ideas on the mental and moral education of children; many suggestions you find there can be adopted in working-class homes, given an intelligent mother. "The Preservation of Infant Life—a Guide for Health Visitors," by Emelia Kanthack, justifies the claim of its title. A subject of never-failing interest to a mother is the clothing of the children. The superabundance of clothing worn by children of the respectable poor calls for reform. Have you ever calculated how many thicknesses of material a little girl wears round her waist in the following garments, the usual allowance among the working-class? A bunchy chemise and knickers, on the top of these, stays, as likely as not with steel busks; a flannel petticoat with pleats or gathers, an upper-skirt of winsey or woollen material with pleats, and probably a kilted blue serge frock skirt! What a waste of material, to say nothing of labour on washing days! No child dressed on these lines has enjoyable freedom of movement. Three garments are sufficient; warm combinations, knickers attached to a bodice, so that the shoulders, not the pelvis, take the weight, and a straight frock. In the winter a vest can be added and heavier material used for the clothing. If you can once persuade the mother to adopt this rational mode of clothing she will quickly appreciate the saving of material and labour. You will win golden opinions if you can advise a mother on the making of children's clothing. This is quite simple with the help of good patterns. Two books written by Miss Synge, and published by Longmans, Green & Co., London, will give you detailed information about most garments a child can need from birth to the age of 14. "Simple Garments for Infants" (price 3s. 6d.) deals with the clothing of a child from birth to four years of age, and "Simple Garments for Children" (price 3s. 6d.) with clothing for boys and girls from the age of four to fourteen. Attached to the book covers are cardboard pockets, containing patterns, scientifically cut from the author's own designs. Illustrations show how they fit. A table of sizes is given for different ages. Exact details of the amount of material required, together with the actual cost, are given, and knitting receipts for various garments are included. You will find these books a great boon if your work includes lectures and practical demonstrations on the proper clothing and cutting-out of children's garments. I consider them a valuable addition to the literature of mother-craft.

The infant visitor must be *au fait* with all the social activities of the district in which she works. You will be expected to advise on most diverse subjects, ranging from how to obtain a situation for a boy or girl just leaving school to where and how to apply for school dinners for needy children. You should know, therefore, all about the work of the Charity Organisation Society *and* its limitations, the Fresh Air Fund, Invalid Children's Aid Associations, the District Nursing Association, the Tuberculosis Dispensary, the Labour Exchange, Provident Dispensary and Maternity Clubs. A working knowledge of out-relief administration and the circumstances which constitute the right to claim is essential. Last, but by no means least, a careful perusal and digestion of the Children Act, 1908, proves uncommonly useful under certain trying circumstances. The Act can be put in motion by anyone, and when other means fail, it is possible, under the provisions of the Act, to bring pressure to bear upon parents and others responsible for children whom you find neglected.

PRACTICAL DETAILS IN HOME VISITING.

The great thing in home visiting is to avoid any semblance of officialism. If you observe the same gracious courtesy in your visit to the mother as you would in making a social call, you will in the majority of cases meet with a friendly welcome. Do not inform the mother that you are the infant inspector, but say pleasantly that you have come to see baby and you hope the time is convenient. You *must* succeed in being invited into the living-room—" door-step " visits are no use; you will rarely find a woman unwilling to ask you in. If the mother is in the midst of the preparation for dinner, peeling potatoes, for instance, beg her to go on; that will impress her with the fact that you are anxious not to be a hindrance. If your visit is obviously inconvenient, offer to call again and ascertain the most convenient time. You will probably be provided with cards for recording your visits; some require a good deal of information (for statistical data), and these are a perfect nuisance; others require just a brief record of essentials. In the former case, if you have to choose between obtaining answers to irritating questions and getting in your advice, by all means choose the latter! Some of the mothers thoroughly enjoy answering questions, so in these cases obtain as full information as possible (this keeps the M.O.H. happy, if he has an insatiable appetite for statistics!). But if there are signs of irritation or impatience, ask only absolutely necessary questions, and, whatever you do, ask them in general conversation—not categorically.

FEEDING.

This is the principal subject of conversation. Begin by asking how baby is fed, unless you see him taking a meal. One of the first things you will have to learn is to modify what you are told by what you see. You may be told that an infant is entirely breast-fed, but if you see a feeding bottle on the table or a saucer of " sops " on the hob, you will suspect that breast-feeding is supplemented. The successful baby visitor has mastered the art of *directing* conversation so that desirable information is *volunteered.* Do not draw the mother's attention to an apparent discrepancy between her statement and your discovery. Wait a little while, then ask how often baby is fed. You will probably get a history ot too frequent feeding, followed by fits of crying, and the remark, "I don't think I've enough milk to satisfy him, so I make him some pobbies," gives you the key to the situation. The baby cries with the pain and discomfort of indigestion, the mother gives him the breast again, thereby aggravating the evil. In desperation, thinking he is not satisfied, she makes him some "sops." Here is the opportunity to recommend regular "clock-time" feeding, and to explain why starchy food, such as "pobbies," is harmful. To emphasise the importance of regular feeding, it is a good plan to make a rough sketch of an infant's stomach, thus giving an idea of its size and capacity. This is the simplest means of teaching how soon the stomach can be over-distended. Try to make the mother promise to give up all artificial food for a week, when you will visit again. You will probably find a contented, thriving baby and a grateful mother. If there really is doubt as to whether the mother has sufficient milk, the case should be dealt with at the "Babies' Welcome" if possible, where weighing and "test-feeds" will decide the matter, and modified cow's milk can be given, under medical supervision if necessary. You may visit a house where the baby is upstairs, asleep. The mother may assure you that he is "getting on champion, fat as butter," or that he is "one of those 'wiry' ones." Now you *must* see that baby. The "champion" babe is quite probably being fed on some starchy patent food, and developing into a flabby, rickety child, whilst the "wiry" infant may be a miserable, ill-nourished, puling little specimen. These are difficult cases to deal with, because you have to teach the mothers what a really healthy baby looks like. This is easy enough at a "Babies' Welcome," where you can show them which points to look for in a healthy baby. Poor mothers are so extremely generous in admiring one another's babes. When pointing out the firm flesh, pink mottled skin, straight limbs and closed fontanelles of the ideal baby, be sure to find points to admire in the other babies; even the most delicate morsel has "a dear wee face," you know, and the poor mother feels consoled by the interest in her baby and not "left out." Mothers *can* be taught to recognise most of the points of a healthy baby and even to show *anxiety* about an unduly fat baby—which shows what education *can* do!

CLOTHING.

The babe's clothing will call for attention. The main points to impress are suitable number, size and distribution of garments—babies are nearly always over-clad—the avoidance of starched bodices to cotton gowns, long ribbon strings to bonnets (which baby will suck), flannelette material, and, above all, stiff binders, which the mother will tell you support the baby's back. Woollen "booties" should reach above the knee so that they cannot be kicked off.

HYGIENE.

Then follows the question of hygiene; how to secure fresh air for baby, where its cot should stand and the necessity for keeping the cot-clothing clean and well-aired. How to keep the milk from contamination—and this *is* a difficult matter in a slum, your ingenuity will be taxed to the utmost to show the mothers how to arrange to the best advantage, but in the most unsatisfactory tenement dwelling a great deal can be done with a piece of clean muslin to cover the jug, a bowl of cold water and the window-sill!

Drugs.

You will frequently be asked your opinion as to the desirability of giving baby drugs. Mothers have great faith in "teething powders"—or a weekly dose of castor oil to prevent constipation—which is just the thing to cause it. You must *never* recommend drugs. Tell the mother that healthy babies do not need medicine. If a baby needs medicine, he also needs a doctor to prescribe it.

Visits.

How long should a single visit take and how many should be made in a day? It is impossible in this kind of work to set a numerical standard. Of course, you can make as many as twenty or more visits in the day, but if, when looking back over the work, you can remember no difficult points to have arisen, you may be sure your work has been superficial and therefore useless. First visits always take longer than re-visits, and visits to hand-fed children invariably present difficulties which must be carefully dealt with. In some cases you are much longer in establishing that friendly relationship with the mother which is essential before you can begin to discuss baby. On the other hand, you meet the young mother, eager to learn, who bombards you with heaps of questions (to your entire satisfaction), and it may be an hour or more before you have dealt with the various points. Re-visits are the most important, the first visit being merely the introduction. Certainly hand-fed babies should be visited not less often than fortnightly, and in any case where there is the possibility of breast-feeding being supplemented or discontinued, it should be kept under careful supervision. I am aware that in many towns this is a counsel of perfection, because of the amount of work to be accomplished by a limited number of visitors, but experience proves that it is better to concentrate on a few than to deal superficially with many. Finally, the value of this work, upon which the future of the race and Empire depends, is incalculable. Our Empire can only be maintained by peopling it. All men once lay in cradles. Work faithfully and hopefully, remembering that "The nation shall live by the breath of its children."

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INDEX.

Adenoids and tonsils, 82-83.
,, Prevention of, 84.
,, Operation for, 85.
Adenitis, 61.
Administration of medicine, 26-27.
Allenbury's food, 18.
Amusements, 103, 104.
Anus imperforate, 77.
Appendectomy, 77.
Artificial feeding, 10, 11, 12.
Attitude in disease, 25, 26.

Barley water, 16.
Baths—
Alkaline, 57.
Temperature of, 2.
Bran or oatmeal, 57.
Cyllin, 57.
Hot-air, 43.
Mustard, 57.
Saline, 57.
Starch, 57.
Sulphur, 58.
Bathing an infant, 1.
Bathing baby's eyes, 89.
Baumol soap, 2.
Bee stings, 91.
Black fits, 39, 40.
Bladder operation, 77, 78.
Bladder washing, 78.
Bland fluids, 52.
Blowing exercises, 39.
Books for health visitors, 109, 110.
Bone operations, 81.
Bottles and teats, 17.
Bowel washing, 33.
Bowel, prolapse of, 35.
Bran water, 52.
Bruises, 91.
Cardiac cases, 40.
Nursing of, 40.
Casein, 11.
Chickenpox, 66.
Nursing of, 68.
Chorea (St. Vitus Dance), 46.
Nursing of, 47.
Choking, 91.
Circumcision, 79.
Cicatrix, 58.
Clay Paget & Co., Ltd., Milk, 15
Clay-coloured stools, 21.
Cleft palate cases, 80.
Clothing, 104, 105, 112.
Colotomy, 77.
Dressings for, 77.
Cold douche, 30.
Colic, intestinal and renal, 24, 25
Conjunctiva, 87.
Constipation, 20.
Convulsions, 30, 44, 45.
Cough, 38.
Cracks behind the ears, 3, 52.
Cries, Baby's, 24.
Croup, 30.

Dentition, Infant, 92, 93.
Dentition during diarrhœa, 20.
Dental decay—
Prevention of, 93, 94.
Dental maxims, 94.
Defervescence, 60.
Desquamation, 63.
Diarrhœa, 32, 33, 34, 35.
Diet in cardiac cases, 41.
,, scarlet fever, 64.
Diet, Respiratory, 38.
Diets, Preparation of, 19.
Diluting milk, 15.
Dog bite, 91.
Douche, Cold, 30.
Dressings for eczema, 51, 52, 53
,, ,, impetigo, 53, 54.
,, ,, itch, 55.
Drugs per rectum, 27.
Dummy teats, 17.

Duties of Health Visitor, 107, 108.
Duties of Sister of Children's Ward, 101, 102, 103.
Dyspnœa, 38.

Earache, 25.
Ear—Foreign body in, 90.
,, Oil in, 25.
Eczema, 50, 51, 52, 53.
Enema—to give infant, 71.
Enuresis, 48.
Epidemic enteritis, 32, 33.
Epileptic fits, 44, 45.
Erythema, 58.
Examination of infant's chest, 37
Excoriation, 58.
Expectoration, 38.
Eyes—Bathing of, 89.
Eye—
  Foreign body in, 90.
  Burns of the, 90.
  Cold compresses for, 90.
  Hot compresses for, 90.
  Irrigation of, 87.
  Ointment to apply, 90.

Face mask—to make, 58.
Facial expression in disease, 26.
Febrile stage of fevers, 60.
Feeds—Preparation of, 13, 14, 15, 16.
Feeding, 9, 10, 11, 12, 13, 14, 15, 34, 38, 47, 103, 111, 112.
Feeding in cardiac cases, 41.
  ,, chorea cases, 47.
  ,, kidney cases, 42.
  ,, respiratory cases, 38.
  ,, rheumatism, 42.
  ,, scarlet fever, 64.
Feeding before operation, 73.
  ,, Times for, 15.
Fits—Epileptic, 44, 45.
Flannelette clothing, 6.
Fomentations—Poppyhead, 69.
Foreign body in ear, 90.
  ,, ,, ,, eye, 90.
  ,, ,, ,, nose, 91.

General treatment of operation cases, 70.
Glaxo, 18.
Grape juice, 13.

Hare-lip and cleft palate, 79, 80.
Hernia cases, 75.
  ,, Operation for, 76.
  ,, Strangulated, 76.
Home visiting, 108, 109, 111.
Hot-air bath, 43.
Human milk—composition of, 11.
Hygiene, 112

Incubation, 59.
Infant consultation, 108.
Infant health visiting, 106.
Infant Health Visitor—Qualifications for, 106, 107, 108, 109.
Infant Health Visitor's Duties, 107, 108.
Infant feeding, 12.
Infant mortality, 106.
Infant's chest—Examination of, 37.
Infection—how it occurs, 59.
Infectious disease, 59.
Impetigo contagiosa, 53, 54.
Instruments for tonsilectomy, 85.
Intestines of new-born infant, 10.
Intertrigo, 58.
Intussusception, 76.
Inunction, 56, 57.
Invasion, 59.
Irrigation of eyes, 87.
Itch, 54, 55.

Jaw bandage—to make, 86.
Juice—grape, orange, 13.
Juice—meat—how to make, 13.

Kidney cases, 42, 43.

Laryngeal spasm, 30.
Lesion, 58.
Lice, 55, 56.
Lotions for eczema, 52.
Lotions—Soothing, 56.

Mastoid operation, 80.
  ,, cases—dressing of, 81.
  ,, suppuration, 61.
Measles, 64.
  Nursing of, 65, 66.
  Complications of, 65.
Medicated baths, 57.
Mellin's food, 18.
Meningitis, 45.
Mercurial poisoning, 54.

Milk—
  Diluted, 11, 15.
  Modified, 15.
  Nestle's, 15.
  Skimmed, 11.
  Sugar of, 11.
  Sterilized, 11.
Mouth breathers, 82, 83.
Mouth—Cleaning of, 2.
Mumps, 68, 69.
  Complications of, 69.

Nasal breathing, 82.
Nasopharynx, 82.
Nephritis, 61.
  Treatment of, 63.
Nestle's milk, 15.
New-born infant's stomach, 9.
Night terrors, 48.
Nose—Foreign body in, 91.
Notification of Births Act, 107.
Nursing—
  Mothers, 10.
  Private, 98, 99, 100.
  of adenoid and tonsil cases, 84, 85, 86.
  of appendectomy cases, 77.
  Bladder cases, 78.
  Cardiac cases, 40.
  Chickenpox, 68.
  Chorea, 47.
  Summer diarrhœa, 33.
  Eczema cases, 51, 52, 53.
  Epilepsy, 44, 45.
  Hare-lip and cleft palate, 79, 80.
  Hernia, 75, 76.
  Impetigo contagiosa, 53.
  Intussusception, 76.
  Kidney diseases, 42, 43.
  Mastoid cases, 80, 81.
  Measles, 65, 66.
  Meningitis, 45, 46.
  Mumps, 69.
  Operation cases, 70.
  Ophthalmia neonatorum, 87, 88.
  Respiratory cases, 36, 37.
  Rheumatism cases, 42.
  Ringworm, 49, 50.
  Scabies (itch), 54, 55.
  Scarlet fever, 62, 63.
  Surgical cases, 70, 71, 72, 73, 74.
  Whooping cough, 39.
Nurse—Private, The, 98.
Nurses' dress, 99.
Nurse's attitude to patient, 99.
  to doctor, 100.
  to servants, 100.

Operation cases, 70.
  Feeding before, 73.
  Nursing after, 73, 74.
Operations—Kidney, 78.
Operations on tonsils and adenoids, 85.
Ophthalmia neonatorum, 87.

Pain in respiratory diseases, 38.
Papules, 58.
Parotitis epidemic, 68.
Pediculosis (lice), 55, 56.
Pertussis, 39.
Phimosis, 79.
Play and playthings, 7.
Pleural effusion, 39.
Possetting, 13.
Posture in cardiac disease, 41.
  ,, in respiratory disease, 36.
Poisoning, 91.
Poultice—Starch and boracic, 51.
Powders, 3.
  ,, used in eczema, 53.
Preparation of bowel for operation, 70.
Preparation of bladder for operation, 71.
Preparation of skin for operation, 72.
Preparation of infant's feeds, 13, 14, 15.
Preparation of children's diet, 19.
Proctoclysis, 74.
Puncture—Spinal, 46.
Pulse in children, 23.
Pustule, 58.

Qualifications of a Children's Nurse, 7.

Rectal salines—To give, 74.
Religious teaching of children, 105.
Renal cases, 42.
Respiration, 23.
Respiratory diseases, 36.
  Nursing of, 36, 37.
Rest in cardiac cases, 40.

Restraint after operation, 72.
  ,, in cardiac cases, 40.
  ,, in eczema, 52.
Rheumatism, 41, 42.
Rhinitis, 63.
Rickets, 28, 29.
  Treatment of, 30.
Ringworm, 49, 50.

Salines—Rectal—To give, 74.
Scab, 58.
Scabies, 54.
Scarlet fever, 60, 61, 62.
  Complications of, 61.
  Nursing of, 62.
Schedule of infant feeding, 12.
Scurvy, 31.
Shock after operation, 73, 74.
  Treatment of, 74.
Sister's duties in children's ward, 101, 102, 103.
Soap suppositories, 21.
Spinal puncture, 46.
Starch and boracic poultice, 51.
Steam kettles, 36.
Stimulants, 27.
St. Vitus' Dance, 46, 47.
Stomach of new-born infant, 9.
Stools, 21, 22.
  Clay-coloured, 21.
  Frothy, 22.
  Green, 22.
  Offensive, 22.
Summer diarrhœa, 32, 33.
Suppuration of middle ear, 63.
Surgical work, 70.

Table of infant's feeding, 12.
Table of stages of infectious disease, 67.
Teats, 17.
Teething, 92, 93.
Teeth—Milk, 92.
  ,, Permanent, 93.
Temperature—To take, 23.
  ,, of room, 35.
Terms used in skin affections, 58.
Throat in scarlatina, 61.
Tongue in scarlatina, 61.
Tonsils and adenoids, 82, 83.
  Prevention of, 84.
Treatment for shock, 74.

Urine—To secure specimen, 43, 44.
Urticaria—Nettle-rash, 56.
Unna's paste dressing, 52.

Vaccination, 94, 95.
Varicella (chickenpox), 66.
Ventilation, 35.
Vesicle, 58.
Virol, 18, 27, 65.
Vomiting, 26.
Vomiting in whooping cough, 39.
Virolax, 66.

Wasp or bee sting, 91.
Washing bowel, 33.
Washing stomach, 34.
Water—
  Oatmeal, 52.
  Barley, 16.
  Bran, 52.
  Starch, 52.
Wetting the bed, 48.
Wheals, 58.
Whooping cough, 39.
Woollen truss—To make and apply, 75.
Worms, 95, 97.
  ,, Thread, 96.
  ,, Round, 95.
  ,, Tape, 96.

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